VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the **reissuance** of the VPDES permit listed below. This permit is being processed as a **Minor,** Industrial permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260 et seq. The controlled discharge is a result of storm water runoff from a bulk petroleum storage facility that is collected and passed through an onsite oil/water separator in Outfall 001, and not treated in Outfall 002 (SIC Code: 4226). This permit action consists of revising existing limitations, assigning new limitations, and updating special conditions.

1. **Facility Name and Address**: IMTT-Virginia Richmond East
5500 Old Osborne Turnpike
Richmond, VA 23231

Location: 5500 Old Osborne Turnpike

2. Permit No. VA0054291
Existing Permit Expiration Date: May 20, 2008

3. Facility Contact Name: Kathy Milstid / Jennifer Lacroix
Title: Project Manager / EHS Manager
Owner: IMTT-Virginia
Owner Address: 2801 S. Military Hwy., Chesapeake, VA 23323
Telephone No: (757) 485-3000

4. Application Complete Date: April 20, 2008
Permit Drafted By: Jeremy Kazio Date: August 29, 2008 Piedmont Regional Office

Reviewed By: Emilee Carpenter Date: November 17, 2008

Curt Linderman Date: December 4, 2008

Public Comment Period Dates: from June 17, 2009 to July 16, 2009
Published Dates: June 17, 2009 and June 24, 2009 in *Style Weekly*

5. Receiving Stream Name: UT of Almond Creek
Basin: James (lower)
Subbasin: N/A
Section: 1a
Class: III
Special Standards: None
River Mile: Outfall 001→2-XOH000.17 Outfall 002→2-XXZ000.13
7-Day, 10-Year Low Flow (7Q10): 0 MGD
1-Day, 10-Year Low Flow (1Q10): 0 MGD
30-Day, 5-Year Low Flow (30Q5): 0 MGD
30-Day, 10-Year Low Flow (30Q10): 0 MGD
7Q10 High Flow months: 0 MGD
1Q10 High Flow months: 0 MGD
Harmonic Mean Flow (HM): 0 MGD
Tidal? NO
On 303(d) list? NO

6. **Operator License Requirements**: Not Applicable.

7. **Reliability Class**: Not Applicable

8. **Permit Characterization**:

( ) Issuance
(X) Reissuance
( ) Revoke & Reissue
( ) Owner Modification
( ) Board Modification
( ) Change of Ownership/Name
Effective Date:
( ) Municipal
SIC Code(s):
(X) Industrial
SIC Code(s): 4226
( ) POTW
( ) PVOTW
(X) Private
( ) Federal
( ) State

(X) Existing Discharge
( ) Proposed Discharge
(X) Effluent Limited
(X) Water Quality Limited
( ) WET Limit
( ) Interim Limits in Permit
( ) Interim Limits in Other Document (attached)
( ) Compliance Schedule Required
( ) Site Specific WQ Criteria
( ) Variance to WQ Standards
( ) Water Effects Ratio
( ) Discharge to 303(d) Listed Segment
(X) Toxics Management Program Required
( ) Toxics Reduction Evaluation
( ) Possible Interstate Effect
( ) Storm Water Management Plan

9. **Discharge Description**

TABLE I – Discharge Description

OUTFALL NUMBER	DISCHARGE SOURCE	TREATMENT	FLOW
001	Stormwater runoff from the truck loading rack area and pump area. The stormwater runoff is held until the permittee deems it necessary to discharge these waters.	Oil/Water Separator	0.005 MGD
002	Stormwater runoff from the petroleum storage tank bermed area. The stormwater runoff is held in the bermed area until the permittee deems it necessary to discharge these waters.	No Treatment	0.005 MGD

See Attachment A for facility diagram.

10. **Sewage Sludge Use or Disposa**l: Not Applicable

11. **Discharge Location Description*:***
See Attachment A for topographic maps and DEQ staff-edited aerial photograph of IMTT-Virginia Richmond East and surrounding area.

Map Name: Richmond (126C) Quadrangle

12. **Material Storage**:
Bulk storage of petroleum products onsite. The area surrounding the above-ground storage tanks is bermed and runoff is retained in a low portion of this area.

13. **Ambient Water Quality Information**:
Ambient water quality data is not needed because the receiving stream is dry at the theoretical low flows used in permit limitation development.

14. **Antidegradation Review & Comments**: Tier 1 **X** Tier 2 _____ Tier 3 _____

The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect those uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The anti-degradation review begins with a Tier determination. The receiving streams for Outfalls 001 and 002 flowing to Almond Creek are determined to be Tier 1 water bodies. The streams are considered Tier 1 due to their naturally ephemeral flow. This determination is based on the ephemeral nature of the streams where beneficial uses cannot be fully attained. (See **Attachment B** for Flow Frequency Memorandum by Jennifer V. Palmore, P.G. dated April 30, 2008 (revised May 2, 2008))

15. **Site Inspection**: Date: May 1, 2008
Performed by: Jeremy Kazio (See **Attachment C**)

16. **Effluent Screening & Limitation Development**:

TABLE 2 – Bases for Effluent Limitations and Monitoring

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITS				MONITORING REQUIREMENTS	
		MO AVG	WE AVG	MIN	MAX	FREQ	SAMPLE TYPE
Flow (MGD) [(a)(b)]	NA	NA	NA	NA	NL	1/month	Estimate
TPH (mg/L) [(a)(b)]	2	NA	NA	NA	15	1/month	Grab
pH (standard units) [(a)(b)]	1	NA	NA	6.0	9.0	1/month	Grab
Total Organic Carbon (mg/L) [(a)(b)]	2	NA	NA	NA	110	1/month	Grab
Dissolved Copper [(a)(b)]	NA	NL	NA	NL	NA	1/ 6 months	Grab
Dissolved Zinc [(b)]	NA	NL	NA	NL	NA	1/ 6 months	Grab
Hardness (mg/L) [(a)(b)]	NA	NL	NA	NL	NA	1/ Year	Grab

1. Water Quality Based 2. Best Professional Judgment (Technology Based Limits)

Footnotes: (a) Applies to Outfall 001 (oil/water separator)
(b) Applies to Outfall 002 (tank farm)

- **Water Quality Based Limitations and Monitoring**: A limitation evaluation begins by determining chronic and acute wasteload allocations (WLA's) using the MSTRANTI Excel Spreadsheet. MSTRANTI produces WLA's using data inputs determined by the permit writer and the Virginia Water Quality Standards (9 VAC 25-260 et. seq.). Once determined, the chronic and acute WLA's are entered into the STATS 2.0.4 computer application along with the appropriate quantification level (QL) and at least one data point. The output from the STATS 2.0.4 application will indicate the need for a permit limitation and calculate that limitation if required.

a. Outfalls 001 and 002 discharge to intermittent streams that do not flow during dry weather. As a result, under design conditions, the receiving stream is regarded as consisting of 100% effluent, and a 100% mix is assumed. Therefore, the inputs for stream quality that are required by MSTRANTI pertaining to pH, hardness, and temperature are the same as those used for effluent quality because both receiving streams' flow volume consist of 100% effluent at design flow.

b. Laboratory reporting forms submitted with monthly DMR's between January 2003 and February 2008 included results for Total Recoverable Cadmium, Total Recoverable Copper, and Total Recoverable Zinc, even though these parameters were not required to be monitored for the 2003-2008 permit term. A limitation evaluation was conducted on Copper and Zinc since there were reported concentrations of these parameters, and it was determined that the concentrations were high enough to produce some limits. However, limits were not allocated because the data represent concentrations of these metals in total recoverable form rather than dissolved form. Therefore, monitoring for Dissolved Copper at Outfalls 001 and 002, as well as Dissolved Zinc at Outfall 002, will be required during the 2009-2014 permit term to determine if there is a need for any future limitations or additional WET Monitoring. (**See Attachment D for reported metals test results; See Attachment E for STATS evaluation**)

- **Best Professional Judgment (Technology-Based Limitations):** These limitations are derived either from current agency guidance or from staff's best professional judgment.

c. The limitation for Total Petroleum Hydrocarbons (TPH) has been changed from 30 mg/L to 15 mg/L in accordance with current agency guidance (permit manual) so as to not be less stringent than Standard Permits for Petroleum Storage & Transportation facilities.

d. The limitation for Total Organic Carbon (TOC) is carried over from the 2003 permit reissuance to the 2009 permit reissuance because the permittee has previously demonstrated compliance with this limit and therefore it cannot be removed due to antibacksliding policies. The TOC limitation originates from previous guidance for permit limitations for Bulk Oil Storage facilities (Permit Manual, issued July 1995, Appendix IN – Industrial, Part F.2.d)

e. Monitoring for Hardness was added to the 2009 permit reissuance due to the addition of Dissolved Copper and Dissolved Zinc monitoring. The accumulated Hardness data will be used to more accurately evaluate for possible metals limitations during the next permit reissuance.

- **Application Screening:**

f. Pollutants believed present in application 2C included BTEX (Benzene, Toluene, Ethylbenzene, and Total Xylenes) and Oil & Grease for Outfalls 001 and 002. Test results for BTEX indicated that the concentrations of each parameter were less than a Quantification Level (QL) that DEQ considers low enough for each of these pollutants to be considered absent from the facility's effluent. Oil & Grease was indicated at a concentration below a QL of 10 mg/L, which is below the 2009 permit limitation for Total Petroleum Hydrocarbons (15 mg/L). Therefore, for the purposes of this permit reissuance, Oil & Grease and BTEX are considered absent from the facility's effluent and no further evaluation is necessary.

g. Other sampling data submitted with the permit renewal application 2C were reported as less than a QL accepted by DEQ to be considered absent for the purposes of this evaluation, except the following:

2/14/08	TPH (semi volatiles)	COD	TSS	TOC
Outfall 001	1.4 mg/L	24.9 mg/L	6.8 mg/L	4.9 mg/L
Outfall 002	--	13.8 mg/L	30.7 mg/L	4.4 mg/L

12/18/07	TPH (semi volatiles)	COD	TSS	BOD	TOC
Outfall 001	3.4 mg/L	40.6 mg/L	9.1 mg/L	10.2 mg/L	11.4 mg/L
Outfall 002	--	16.9 mg/L	74.7 mg/L	3.2 mg/L	4.5 mg/L

Discussion:

- ✓ Outfall 001-TPH (semi-volatiles): This parameter was indicated at a concentration level less than the current limitation for TPH (30 mg/L), as well as less than the new limitation of 15 mg/L. Therefore, no further evaluation is necessary.

- ✓ COD and TSS were reported at concentrations low enough to not warrant further evaluation.

- ✓ TOC is also a limitation in the 2003 permit (110 mg/L) and is being carried forth to the 2009 permit reissuance. Test results for both outfalls show concentrations less than the current limitation for both outfalls. Therefore, no further evaluation is necessary.

- ✓ BOD test results reported for both outfalls are considered low enough to not warrant further evaluation.

17. **Antibacksliding Statement** : All limits are at least as stringent as the previous permit.

18. **Special Conditions**:

B1. Notification Levels
Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 A for all manufacturing, commercial, mining, and silvicultural dischargers.

B2. Operations & Maintenance Manual
Rationale: Required by Code of Virginia § 62.1-44.16; VPDES Permit Regulation, 9 VAC 25-31-190 E, and 40 CFR 122.41(e). These require proper operation and maintenance of the permitted facility. Compliance with an approved O&M manual ensures this.

B3. Materials Handling & Storage
Rationale: 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia § 62.1-44.16 and 62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste.

B4. Compliance Reporting
Rationale: Authorized by VPDES Permit Regulation, 9 VAC 25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The

quantification levels (QL's) for all metals (in this case Zinc and Copper) are normally calculated as the lesser of 0.4 times the current calculated acute waste load allocation or 0.6 times the current calculated chronic waste load allocation of each pollutant. The QL for Total Xylenes in the hydrostatic testing portion (Part I.B.5.) of the permit is based on advice from OWPP via telephone on February 4, 2008. The condition also establishes protocols for calculation of reported values. Significant digits guidance was added in accordance with GM06-2016.

B5. Hydrostatic Testing
Rationale: Required by 9 VAC 25-120-10 et seq. using the guidance from the VPDES general permit for discharges from Petroleum Contaminated Sites, Groundwater Remediation and Hydrostatic Tests to determine the basis for effluent limits and monitoring requirements. Conditional monitoring and effluent limitations for the remaining parameters were included as this facility is a terminal for hire and the contents of the tanks may vary.

B6. **Oil Storage Ground Water Monitoring Reopener**
Rationale: Facilities with greater than 1,000,000 gallons of regulated aboveground petroleum storage are required to monitor ground water under the Facility and Aboveground Storage Tank Regulation (9 VAC 25-91-10 et seq.). Where potential exists for ground water pollution and that regulation does not require monitoring, the VPDES permit may contain groundwater monitoring under Code of Virginia § 62.1-44.21.

B7. Whole Effluent Toxicity (WET) Monitoring Requirements
Rationale: VPDES Permit Regulation, 9 VAC 25-31-210 and 220 I, requires monitoring in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act. WET testing requirements and language were provided by OWPP.

B8. Total Maximum Daily Load (TMDL) Reopener
Rationale: Section 303(d) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to Section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed it they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act. This reopener is included in all permits.

B9. Water Quality Criteria Reopener
Rationale: VPDES Permit Regulation, 9 VAC 25-31-220 D requires effluent limitations to be established which will contribute to the attainment or maintenance of the water quality standards.

B10. Monthly Sampling Requirements
Rationale: The intermittent frequency with which this facility discharges may prevent a sampling event from occurring on a minimum basis of once per month as is indicated by the minimum monitoring requirements for Flow, TPH, pH, and TOC in Part I.A.1.a and Part I.A.2.a of the 2009 permit. Therefore further sampling instruction has been added in this special condition for months in which no discharge occurs in order that the permittee remains consistent with previous sampling practices and current agency policy. Testing for Copper, Zinc, and Hardness, which require once per six month monitoring, should begin six months after with the 2009 permit's effective date and once every six months afterward for the remaining term of the permit.

Part II, Conditions Applicable to All Permits
Rationale: VPDES Permit Regulation, 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

19. **NPDES Permit Rating Work Sheet**: Total Score: 55 (**See Attachment F**)

20. **Changes to Permit:**

a. The facility's official name has changed from IMTT-Richmond East to IMTT-Virginia Richmond East as of June 5, 2009 and is reflected in the permit cover page accordingly.

b. Changes to Cover Page:

- The Owner's name has changed from International Matex Tank Terminals to IMTT-Virginia. The correspondence contained in Attachment F (letter dated January 2, 2008) of this fact sheet regarding the name change of this facility was made in response to a letter requesting a facility name change written by a previous employee of this permittee. In addition, the facility name has been changed under the advisement of the permittee (Kathy Milstid) via an email message received on May 31, 2009 during the permittee's review of the draft permit.

- The changes below regarding river basin identifications are a result of the revised Water Quality Standards effective January 2006, and the Flow Frequency Memorandum (See **Attachment B**)

Outfall Description Changed from: Outfall 001: Unnamed Tributary to a private pond Outfall 002: Unnamed Tributary to James River Changed to: Outfalls 001 & 002: Unnamed Tributary to Almond Creek
River Basin – Middle James to Lower James
River Section – 7 to 1a
NEW-18 special standard removed from Outfall 002

TABLE 3 – Changes to Permit: Limits and Monitoring (Part I.A.)

Parameter Changed	Effluent Limits Changed		Monitoring Requirement Changed		Reason for Change	Date
	From	To	From	To		
TPH[(a)(b)]	30 mg/L	15 mg/L	1/Month	No Change	The limitation for TPH has been changed in accordance with current agency guidance (permit manual revision February 16, 2007).	1/08
Dissolved Copper[(a)(b)]	--	NL	--	1/6 months	See Section 16.d. of this fact sheet.	8/08
Dissolved Zinc[(b)]	--	NL	--	1/6 months		
Hardness[(a)(b)]	--	NL	--	1/ Year	This parameter has been added in order that metals parameters may be more accurately evaluated.	8/08

Footnotes: (a) Applies to Outfall 001 (oil/water separator)
(b) Applies to Outfall 002 (tank farm)

TABLE 4 – Changes to Permit (cont.): Special Conditions

Permit Special Conditions		
From	To	Rationale
--	Part I.A.1.a.(1) Part I.A.2.a.(1)	Significant Digits – New, reflects current agency guidance (GM06-2016)
--	Part I.A.1.a.(2) Part I.A.2.a.(2)	TPH Analysis Requirements – New, reflects TPH analysis procedures as required by EPA's January 2008 updates to the "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" or SW-846 as reflected in 9 VAC 25-120
--	Part I.A.1.a.(3) Part I.A.2.a.(3)	Hardness Sampling – Sampling for hardness should correlate with metals sampling in order to better evaluate metals during the next permit reissuance
--	Part I.A.1.b. Part I.A.2.b.	Effluent Sample Location - New, reflects current agency guidance.
--	Part I.A.1.c. Part I.A.2.c.	Hydrostatic Test Waters Reference – New, added for clarification purposes.
Part I.A.1.a. Part I.A.2.a.	Part I.A.1.d. Part I.A.2.d.	Visible Effluent Quality – No Change
Part I.A.1.b. Part I.A.2.b.	Part I.A.1.e Part I.A.2.e.	Tank Bottom Waters – No Change

--	Part I.A.1.f. Part I.A.2.f.	WET Monitoring Reference – New, reflects addition of WET monitoring for Outfall 001 and Outfall 002 for 2009 permit reissuance
--	Part I.A.1.g. Part I.A.2.g.	Monthly Sampling Requirements reference – New, added for clarity purposes relating to monthly monitoring requirements.
Part I.A.1.c. Part I.A.2.c.	Removed	Sampling During Storm Events – This facility does not discharge during storm events, but rather retains stormwater until such time that is deemed necessary by the permittee to release the waters by way of gated valves. Therefore, this requirement has been removed.
Part I.A.1.d. Part I.A.2.d.	Part I.A.1.g Part I.A.2.g	Compliance Reporting Reference – Revised to reflect structural changes to the 2009 permit
Part I.B.1.	Part I.B.1.	Notification Levels – No Change.
Part I.B.2.	Part I.B.2.	Operations & Maintenance Manual – Language revised to reflect updated VPDES Permit Manual boilerplate, dated February 16, 2007 and current agency guidance.
Part I.B.3.	Part I.B.3.	Materials Handling & Storage – No Change
Part I.B.5.	Part I.B.4.	Compliance Reporting Under Part I.A.– Language changed for clarity and in accordance with agency guidance. Reporting instructions pertaining to significant digits added in accordance with GM06-2016.
Part I.B.7.	Part I.B.5.	Hydrostatic Testing – Language revised for acuity purposes. Parameter testing procedures added to reflect current agency guidance. Additional monitoring requirements, additional limits for TRC and pH, and more stringent limits for Total Xylenes, Naphthalene, and Lead were inserted to maintain consistency with other recently re-issued PRO bulk oil storage facility permits and with 9 VAC 25-120 et.seq (General Permit for Discharges from Petroleum Contaminated Sites). The total recoverable lead limit is based on the January 2006 Water Quality Standards calculated acute criteria for Lead using a conservative assumption for hardness of 25 mg/L = e^{1.273[ln(25)]-1.084}
Part I.B.6.	Part I.B.6.	Oil Storage Groundwater Monitoring Reopener – Language revised to reflect updated VPDES Permit Manual boilerplate, dated February 16, 2007.
--	Part I.B.7.	Biological Monitoring – Please see explanation in Section 23 of this fact sheet.
--	Part I.B.8.	TMDL Reopener – New, added to reflect updated VPDES Permit Manual boilerplate, dated February 16, 2007.
--	Part I.B.9.	Water Quality Criteria Reopener – New, added due to new Biological Monitoring requirement.
--	Part I.B.10.	Monthly Monitoring Requirements – New, added to clarify monthly monitoring requirements due to the facility's intermittent discharge.
Part I.B.4.	Removed	Nutrient Enriched Waters Reopener – Removed, the NEW-18 designation previously assigned to the permittee's receiving stream was repealed in 9VAC 25-260, effective June 24, 2005.

21. **Variances/Alternate Limits or Conditions**: None

22. **Public Notice Information required by 9 VAC 25-31-280 B**:

Comment period: Start Date: June 17, 2009 End Date: Jul 16, 2009
Published Dates: June 17, 2009 and June 24, 2009 in *Style Weekly*

All pertinent information is on file and may be inspected or copied by contacting Jeremy Kazio at:

Virginia Department of Environmental Quality (DEQ)
Piedmont Regional Office
4949-A Cox Road
Glen Allen, Virginia 23060-6296
Telephone Number 804/527-5044
Facsimile Number 804/527-5106
Email jskazio@deq.virginia.gov

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions.

Following the comment period, the Board will make a determination regarding the proposed permit action.

The public may review the draft permit and application at the DEQ Piedmont Regional Office by appointment.

23. **Additional Comments**:

Previous Board Action: None

Staff Comments:

- Monitoring Frequencies: A reduction in monitoring frequency was not considered for this permit reissuance due to the intermittent nature of the permittee's discharge (Average discharge of 3-4 times per year).

- Although this facility's SIC Code (4226) is included under Sector P of the sector-specific stormwater pollution prevention plan categories, vehicle and equipment maintenance shops (vehicle and equipment rehabilitation, mechanical repairs, painting, fueling and lubrication) and/or equipment cleaning operations *do not* exist on site. Therefore, stormwater regulations do not apply to this facility.

- During the 2009 permit reissuance, the permittee requested that this facility be modified to reflect a legal name change. The permittee notified staff by

telephone in late November 2007 that a name change would be needed, and staff responded by requesting that the permittee submit a letter to that effect. Approximately 2 weeks later the permittee submitted this letter with a notification that the name change should occur before January 1, 2008. Staff responded with a letter dated January 2, 2008. Please see **Attachment F** for correspondence between the permittee and DEQ clarifying this name change.

- A compliance schedule for the new permit limitation for TPH was not given as it is believed by staff that the permittee will be able to comply with the new limitation at permit reissuance based on past DMR data.

- This permit is being reissued late due to delayed and untimely and incomplete application submission and WET monitoring issues.

- A key factor in determining the monitoring requirements for hydrostatic testing waters for this facility is that the description of the nature of the business included in the application indicated that this facility temporarily stores petroleum-based products on a "for hire" basis. It is assumed that this means that there may be a wide variety of petroleum-based substances stored at this facility, and that the permittee may need to conduct hydrostatic testing on pipelines or tanks that may have been used to transport or store these substances. Therefore, using DEQ's general permit for Petroleum Contaminated Sites (VAG83) as a guide, the limitations and monitoring requirements for hydrostatic testing have been expanded to include a wider range of substances in order to account for any potential contaminants associated with this facility's storage capabilities.

- This facility does not currently have coverage under the Watershed Nutrient General Permit. This facility is not currently considered a significant discharger of nutrients to the Chesapeake Bay per the definition of "significant discharger" established in 9 VAC 25-720; under the most extreme conditions (i.e. a combined discharge rate of 0.01 MGD), the resulting loads are less than the equivalent loads of a significant discharger. As the facility has not proposed an expansion or upgrade to the wastewater treatment facilities at this time, further evaluation of nutrients is not necessary.

- During the 2003 reissuance of this permit, DEQ staff made the decision to exclude WET monitoring from the permit for the reasoning stated in the attached excerpt from the 2003 fact sheet (See **Attachment G**). This reasoning included:

  1) An Instream Impact Study dated May 18, 1995 (See **Attachment G**) states that the receiving stream for Outfall 001 is ephemeral and cannot support aquatic flora or fauna. Staff decided that whole effluent toxicity testing was considered "moot" in a situation in which the receiving stream cannot sustain life.

  2) The abovementioned Instream Impact Study also states that, during substantial rainfall events, the facility's effluent comprises 3% of the receiving stream's total flow volume. Staff decided that the effluent at this small a percentage of the receiving stream would not result in toxicity.

  3) The Instream Impact Study states that the receiving stream for Outfall 001 flows to a privately owned pond on another property that does not discharge to Almond Creek, or any other State waters. Staff decided that since there was not a discharge to State waters, whole effluent toxicity testing was not necessary.

For the 2009 permit reissuance, staff has decided that it is necessary to include whole effluent toxicity (WET) monitoring. This decision is supported by the following reasons:

1) A site visit was conducted by staff on May 1, 2008 (See **Attachment C**) in order to determine the fate of the discharge from both outfalls. It was confirmed that both of the receiving streams to which Outfalls 001 and 002 discharge flow to the same pond located within an adjacent privately owned property that does not belong to the permittee. A cast iron pipe was discovered at a location between the private pond and Almond Creek. This pipe produced a continuous discharge to Almond Creek originating from an unapparent source. Without any storm water collection systems or point source origins within a plausible range of the outlet, it can be conservatively assumed that the pipe's flow originates from an overflow for the pond, which means that it is possible that the effluent from IMTT-Virginia Richmond East may reach State waters.

2) It was recommended in the aforementioned Instream Impact Study that annual acute toxicity testing be conducted for compliance monitoring purposes. It is also stated in a site visit memorandum dated November 19, 2002 (See **Attachment G**) that the oil/water separator was in poor condition at the time of the visit. As a result of this observation, it was recommended that WET testing may be appropriate during the 2003 permit reissuance in order to assess the oil/water separator's treatment capabilities. Based on the pictures taken during staff's May 1, 2008 visit to this facility, the oil/water separator was again observed to be in poor condition.

3) One of the reasons for excluding WET testing in the 2003 permit stated that the effluent comprised 3% of the receiving stream volume during storm events, and therefore the effluent would not have a significant effect on stream quality. However, this facility does not discharge during storm or rainfall events, but rather retains storm water and discharges when the permittee deems it necessary, which averages 3-4 times per year. This is a built in safety factor for the facility in case a petroleum product spill occurs due to a compromised AST, or if spillage occurs during transfer of the product between the transport truck and AST. The retention and intermittent release of storm water produces a situation in which the facility's effluent may comprise up to 100% of the receiving stream's flow volume.

4) Laboratory reporting forms submitted with monthly DMR's between January 2003 and February 2008 included results for Total Recoverable Cadmium, Total Recoverable Copper, and Total Recoverable Zinc, even though these parameters were not required to be monitored for the 2003-2008 permit term. A limitation evaluation was conducted on each of these pollutants, and it was determined that the concentrations were high enough to produce some limits. Monitoring for these metals, along with WET monitoring, should aid in determining if this facility is producing effluent that may be in violation of Water Quality Standards.

5) Aquatic life was observed in the private ponds during staff's May 1, 2008 site visit in the form of frogs and turtles.

Considering the factors stated above, staff has decided to incorporate WET monitoring in the 2009 permit re-issuance.

24. **Public Comment**: No comments received

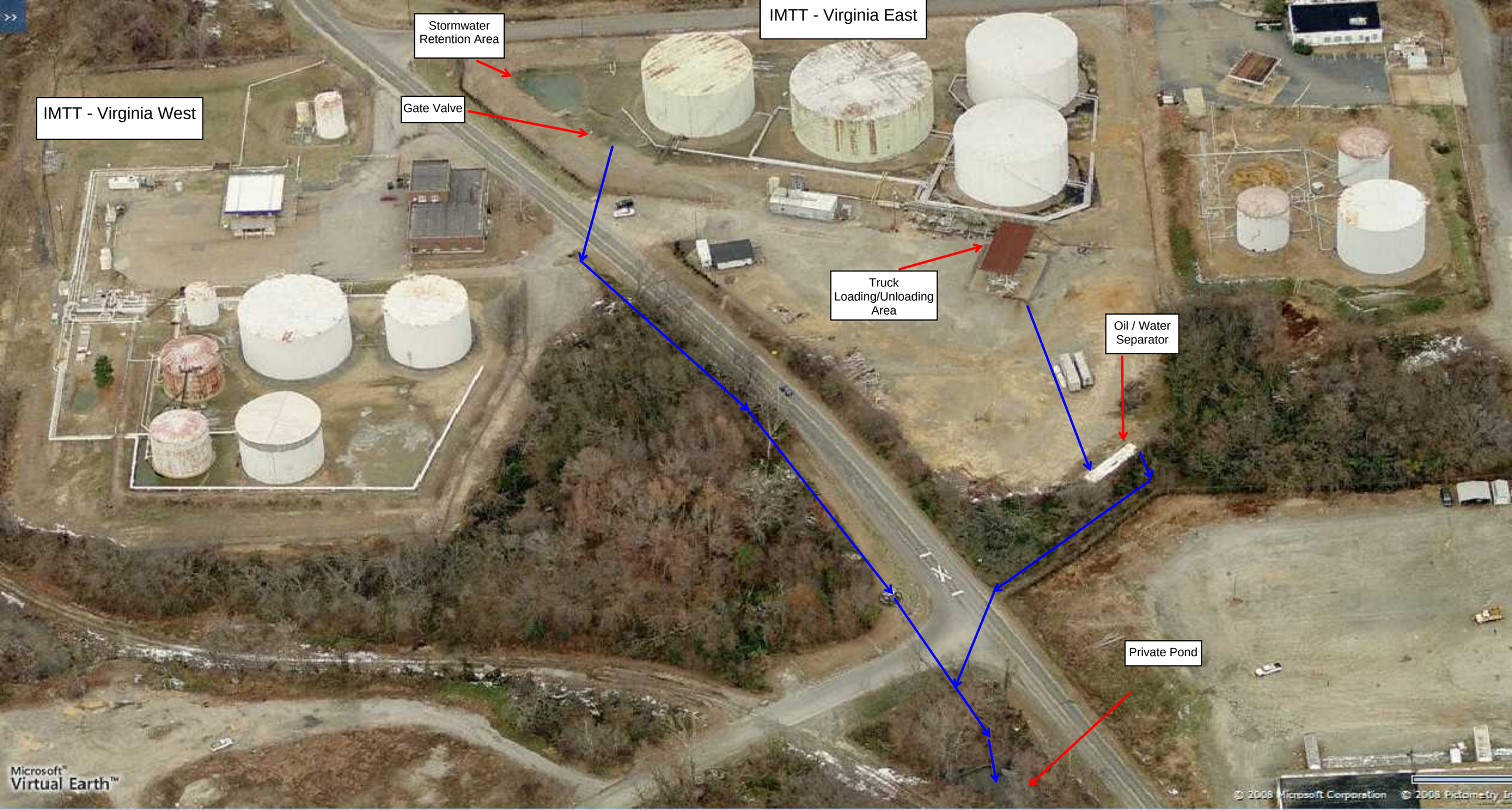
25. **303(d) Listed Segments (TMDL)**: This facility does not discharge to a stream segment listed in the current 303(d) list. Please see the Flow Frequency and 303(d) Status Determination memorandum in **Attachment B**

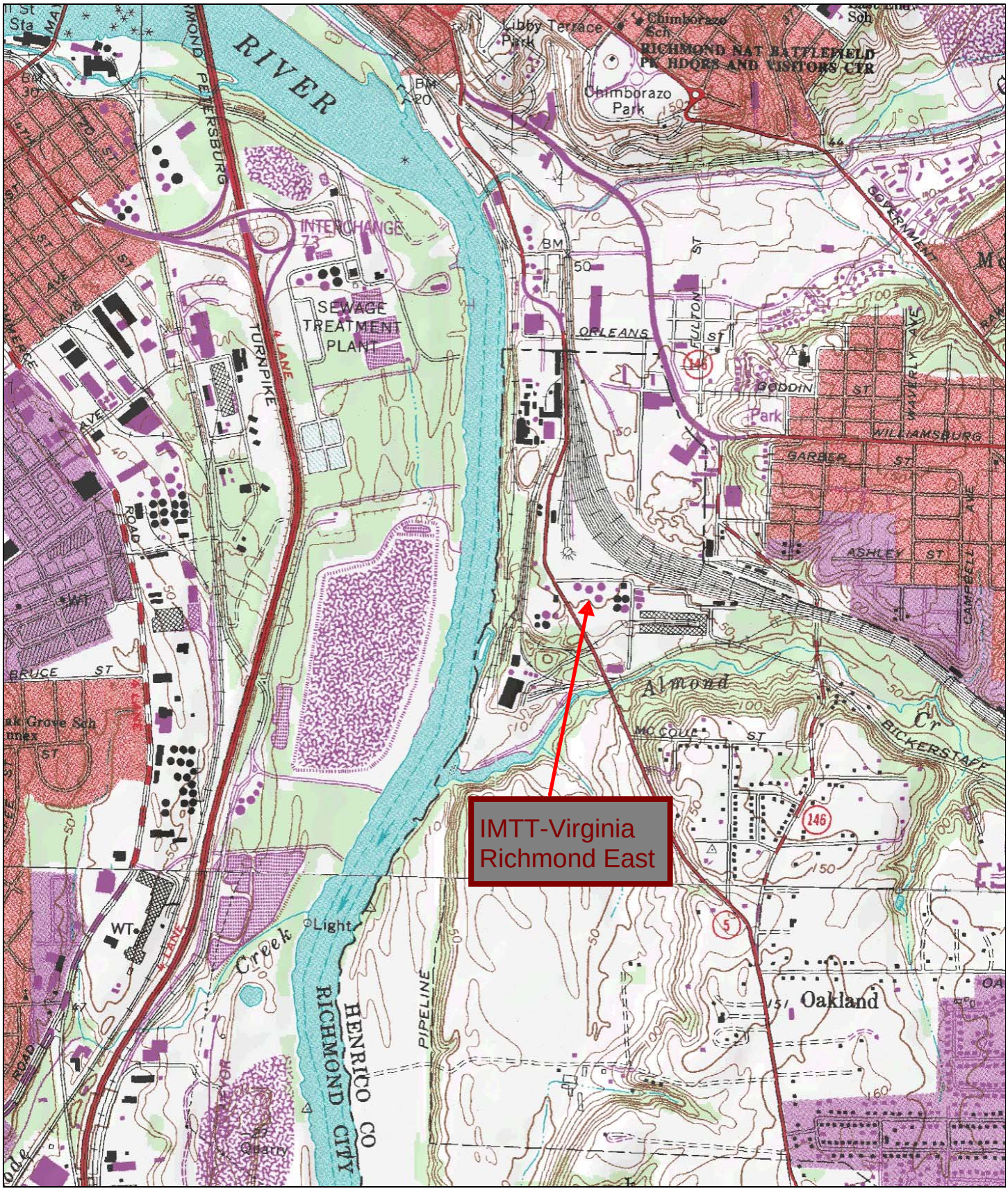
26. **Fact Sheet Attachment Guide**:

Attachment A	Facility Diagram, Topo Map, & DEQ Staff-Created Aerial Photo
Attachment B	Flow Frequency Determination
Attachment C	Site Inspection Report
Attachment D	Effluent Testing Results, DMR Data
Attachment E	Effluent Limitation Analysis & MSTRANTI Data Source Sheet
Attachment F	Name Change Correspondence, NPDES Permit Rating Worksheet
Attachment G	WET Information

Attachment A

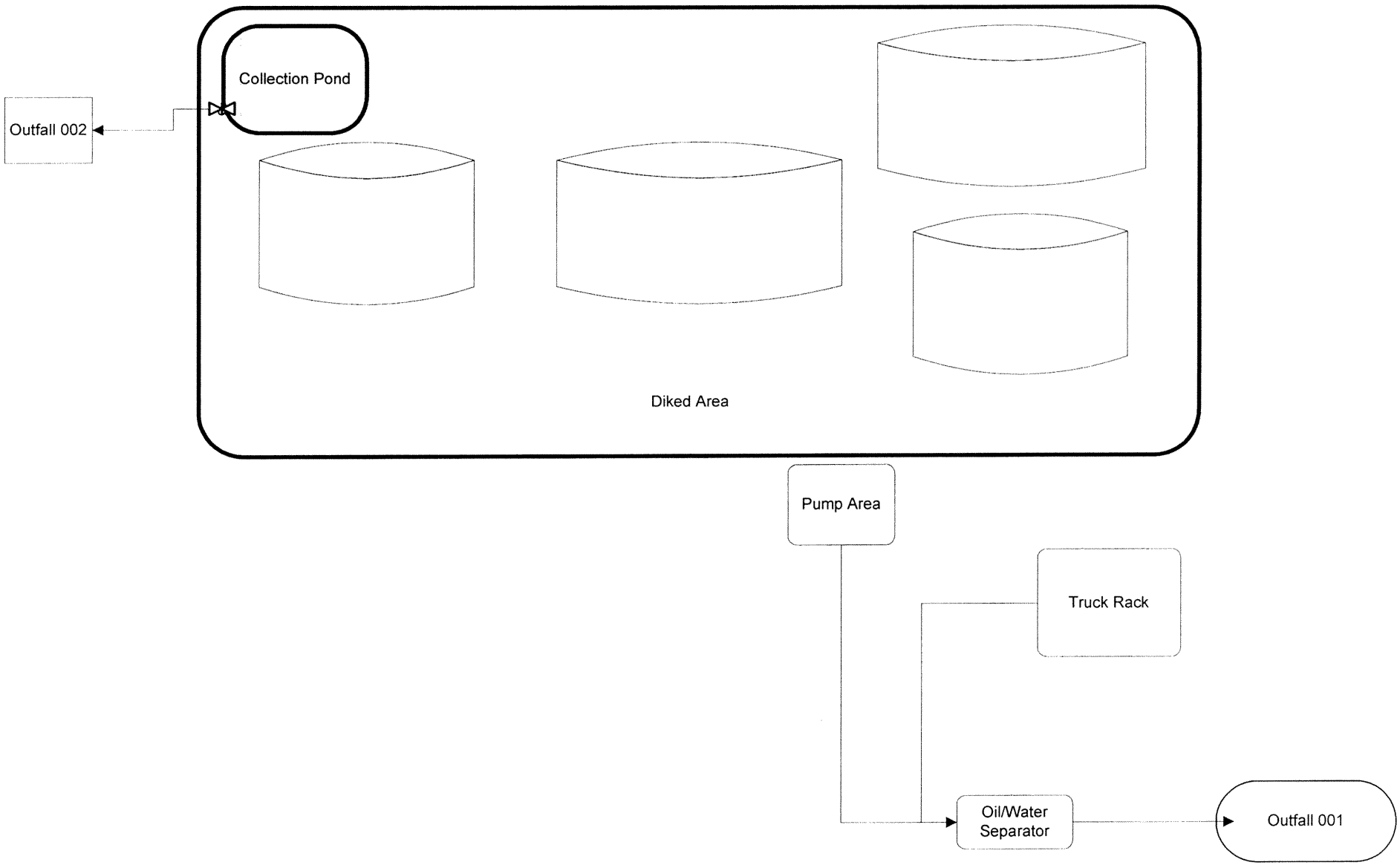
Facility Diagram, Topo Map, & DEQ Staff-Created Aerial Photo


IMTT - Virginia East
Stormwater Retention Area
IMTT - Virginia West
Gate Valve
Truck Loading/Unloading Area
Oil / Water Separator
Private Pond
Microsoft Virtual Earth™
© 2008 Microsoft Corporation
© 2008 Pictometry



0 0.5 Mi
0 2000 Ft

Map provided by MyTopo.com



Line Drawing of Facility Showing Water Flow Through the IMTT-Virginia East Facility

Attachment B

Flow Frequency Determination

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office
4949-A Cox Road Glen Allen, Virginia 23060

SUBJECT: Flow Frequency Determination / 303(d) Status
IMTT Virginia East – VA0054291

TO: Jeremy Kazio

FROM: Jennifer V. Palmore, P.G.

DATE: April 30, 2008
REVISED: May 2, 2008

COPIES: File

The IMTT - Virginia East facility discharges via two outfalls to unnamed tributaries of Almond Creek in Henrico County, VA. The rivermile for outfall 001 is 2-XOH000.17 and for outfall 002 is 2-XXZ000.13. Flow frequencies have been requested at this site for use in developing effluent limitations for the VPDES permit.

At the discharge points, the receiving streams are shown as dry ditches on the USGS Richmond Quadrangle. The flow frequencies for dry ditches and intermittent streams are listed below:

Outfalls 001 and 002:

1Q30 = 0.00 cfs	High Flow 1Q10 = 0.00 cfs
1Q10 = 0.00 cfs	High Flow 7Q10 = 0.00 cfs
7Q10 = 0.00 cfs	High Flow 30Q10 = 0.00 cfs
30Q10 = 0.00 cfs	HM = 0.00 cfs
30Q5 = 0.00 cfs	

Due to their ephemeral nature, the receiving streams should be considered Tier 1 waters. Effluent data should be used to characterize the streams during low flow conditions.

In the 2006 305(b)/303(d) Water Quality Assessments Integrated Report, the receiving streams were considered fully supporting with observed effects for the Fish Consumption Use due to the Virginia Department of Health fish consumption advisory for kepone. The other designated uses were not assessed.

If you have any questions concerning this analysis, please let me know.

Attachment C

Site Inspection Report

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office

4949-A Cox Rd Glen Allen, VA 23060 (804) 527-5020

SUBJECT: Site Visit

TO: File

FROM: Jeremy Kazio, PRO

DATE: 1 May 2008

COPIES: Curt Linderman, Jennifer Palmore,

Facility Name: IMTT Virginia-East Permit Number: VA0054291

On May 1, 2008, I made a site visit to this facility in order to approximately determine the fate of the discharge from Outfall 001 for IMTT Virginia-East.

The facility is located at 5500 Old Osborne Turnpike and is a bulk petroleum storage facility which has two separate permitted outfalls. The discharge waters from Outfall 001 originate from stormwater that is collected at a truck loading/unloading area, then pumped to an oil/water separator providing basic treatment. The discharge from Outfall 002 is collected from within the bermed area in which petroleum storage tanks are contained. Collected stormwater is not treated before it is released at this discharge point.

The purpose of this site visit was to determine the fate of the discharge from Outfall 001, as the fact sheet included with the 2003 reissuance indicated that Toxicity Testing was not included because the discharge eventually ends at a private pond that does not discharge to state waters. Also, the 2003 fact sheet specifies that the ephemeral stream to which Outfall 001 discharged was not able to support flora or fauna based on an instream impact study memorandum completed on May 18, 1995.

In order to aid in obtaining a clearer determination of the nature of this flow during this site visit, a handheld GPS was used to acquire specific locations of interest. Photographs were also taken, and are used to aid in describing staff's findings. Each GPS location is called a Waypoint, and each are numbered in the chronological order in which staff visited each location during the course of the site visit. Please see the attached aerial photograph (Figure 1) depicting the location of each waypoint. This aerial photo was constructed by Jennifer Palmore, P.G. utilizing a GIS program and the coordinates acquired during the site visit to depict the absolute locations of each waypoint. The same aerial photograph has been modified to depict staff's conclusion about the flow from each outfall as well as the general vantage point of the photographs taken at each waypoint. (Figure 2).

Waypoint 1 37° 30.561' / 77° 24.827'

This waypoint marks the point at which Outfall 002 discharges to a roadside drainage ditch, which then flows south under Route 5 and continues running parallel to Route 5 until it reaches the above mentioned private pond. See Figure 2.

Waypoint 2 37° 30.445' / 77° 24.767'

A free flowing stream was discovered originating from a drainage culvert located at this waypoint. The stream bottom was covered by a thick (1/8"-1/4") faded orange colored material assumed to be a type of ferrous bacteria. Staff noted a very strong and pungent odor akin to diesel fuel within as far away as 10' from the stream, and much stronger within a closer distance. There was a large quantity of loose litter such as cans, bottles, paper, and tires strewn around and within the stream. See Figure 1. and photographs below.

Photo 1

Photo 2

Discharge pipe

Photo 3

Waypoint 3 37° 30.436' / 77° 24.760'

This marks the location of the point at which the abovementioned stream flows into a small pond (labeled Pond 1 in Figure 2.) Please see photo below and Figure 2.

Photo 4

Waypoint 4 37° 30.406’ / 77° 24.734’

This waypoint simply marks a view of a second pond (labeled Pond 2 in Figure 2.) located across the railroad tracks from the first pond. See Figure 2. for below photo vantage point.

Photo 5

Waypoint 5 37° 30.383’ / 77° 24.754’

A ~12” diameter cast iron pipe was found to be discharging a steady stream of water at this location. As was the case for the water being discharged at waypoint 2, the stream bottom was again covered with a reddish-orange material assumed to be ferrous bacteria, but the color of this material was not as pale. The stream also had a somewhat strong odor of hydrogen sulfide, in addition to another smell that can be described as “plastic-like”, which could be detected up to 5’ away. The water from the discharge pipe flowed approximately 25 feet before reaching Almond Creek. See Figure 2. and the photos below.

Photo 6

Photo 7

Photo 8

Waypoint 6 37° 30.370' / 77° 24.764'

This marks the point where the stream formed by the discharge located at waypoint 5 empties into Almond Creek. The confluence occurs under the root system of a fallen tree. See photo below and Figure 2.

Photo 9

Photo 10

Waypoint 7 37° 30.396' / 77° 24.733'

A 4" diameter cast iron discharge pipe (no discharge at time of site visit) is located at this waypoint. It seems like this pipe has discharged in the past, but there is no way to know where the pipe originates from. See photo below and Figure 2.

Photo 11

Waypoint 8 37° 30.470' / 77° 24.754'

This location is the point where the receiving ditch for Outfall 001 combines with the drainage ditch that runs southeast parallel to Route 5 on the northeastern side of the road. It is assumed that the water collected here is piped under the road to waypoint 2, eventually flowing to Pond 1. See photo below and Figure 2.

Photo 12

Photo 13

Waypoint 9 37° 30.524’ / 77° 24.792’

An unknown discharge pipe was located at this waypoint. Approximately 25’ northeast of this pipe there were two concrete septic tanks linked in series, one located above-ground and one was subsurface. The subsurface septic tank had an alarm box located next to it. It is unknown what these septic tanks are for, but staff believes it might warrant mentioning in this report. See photos below.

Photo 14

Waypoint 10 37° 30.495’ / 77° 24.725’

It was not possible to stand at the exact discharge point to acquire GPS coordinates for Outfall 001, so a point was chosen approximately 15’ northwest of the end of the discharge pipe for this outfall. The photos below display the size and condition of the oil/water separator located adjacent to the outfall location. See photos below and Figure 2.

Photo 15

Photo 16

Conclusions/Discussion

It is staff's belief that the private pond referred to in the instream impact study (May 18,1995) does indeed include a discharge to Almond Creek by way of the discharge pipe observed at waypoint 5. The pipe observed at waypoint 7 may also serve as a small overflow for Pond 2, though it is difficult to be certain of that assessment. Although aquatic wildlife was not observed in the receiving stream for Outfall 001, it was observed that the pond to which this receiving flowed supported both frogs and turtles, as well as hydrophilic vegetation. The abovementioned instream impact study also cited that the flow from Outfall 001 constituted only 3% of the flow of receiving stream during a storm event. However, it should be noted that the permittee does not discharge during storm events, but rather contains stormwater until it needs to be released, which is approximately 3-4 times per year. The DMR data for both Outfalls 001 and 002 collected for this facility from July 2003 to February 2008 contained four reported test results for Cadmium, Copper, and Zinc, even though they were not collected as a result of permit requirements. These test results were evaluated using MSTRANTI and STATS, which indicated that a Copper limit is needed for Outfall 001, and Copper and Zinc limits are needed for Outfall 002.

It is staff's recommendation that WET monitoring be placed in the 2008 permit reissuance in accordance with the recommendation of the abovementioned instream impact memorandum.

FIGURE 1


1
Outfall 002
9
Outfall 001
10
8
2
3
Pond 1
Pond 2
4
7
5
6
Almond Creek

FIGURE 2

Attachment D

Effluent Testing Results, DMR Data

DMR Data - IMTT Virginia East (July 2003 - February 2008)

Rainfall amounts according to NOAA (inches)		DMR Due Date	Permit Limit Parameters Outfall 001				Permit Limit Parameters Outfall 002			
			Flow (MGD)	pH (SU)	TOC (mg/L)	TPH (mg/L)	Flow (MGD)	pH (SU)	TOC (mg/L)	TPH (mg/L)
Jun-03	3.87	10-Jul-2003	0.005	7.66	2.9	<5.0	0.004	6.23	7.6	<5.0
Jul-03	9.26	10-Aug-2003								
Aug-03	4.66	10-Sep-2003	0.004	7.74	5.5	<5.0	0.005	6.74	7.3	<5
Sep-03	10.1	10-Oct-2003								
Oct-03	2.43	10-Nov-2003								
Nov-03	3.39	10-Dec-2003								
Dec-03	4.28	10-Jan-2004	0.005	6.9	3.5	<5.0	0.004	7.56	3.1	<5.0
Jan-04	1.55	10-Feb-2004								
Feb-04	1.87	10-Mar-2004								
Mar-04	2.08	10-Apr-2004								
Apr-04	3.42	10-May-2004								
May-04	3.06	10-Jun-2004								
Jun-04	9.93	10-Jul-2004	0.004	6.99	5.4	<5.0	0.005	7.32	4.1	<5.0
Jul-04	6.44	10-Aug-2004								
Aug-04	16.3	10-Sep-2004	0.005	6.42	3	<5.0	0.004	6.35	2.6	<5.0
Sep-04	6.14	10-Oct-2004								
Oct-04	1.95	10-Nov-2004								
Nov-04	3.27	10-Dec-2004								
Dec-04	2.37	10-Jan-2005	0.004	8.21	2.6	<1.0	0.005	8.21	3.9	<1.0
Jan-05	3.42	10-Feb-2005								
Feb-05	1.87	10-Mar-2005								
Mar-05	3.99	10-Apr-2005								
Apr-05	2.05	10-May-2005								
May-05	4.22	10-Jun-2005	0.004	7.16	2.4	<5.0	0.005	6.82	4.7	<5.0
Jun-05	1.19	10-Jul-2005								
Jul-05	9.28	10-Aug-2005								
Aug-05	2.56	10-Sep-2005								
Sep-05	0.08	10-Oct-2005								
Oct-05	3.74	10-Nov-2005								
Nov-05	3.81	10-Dec-2005								
Dec-05	5.81	10-Jan-2006	0.004	6.2	1.4	<1.0				
Jan-06	2.89	10-Feb-2006								
Feb-06	1.47	10-Mar-2006	0.004	7.2	1.2	<QL	0.0005	6.9	2.1	<QL
Mar-06	0.3	10-Apr-2006								
Apr-06	2.53	10-May-2006								
May-06	3.63	10-Jun-2006								
Jun-06	4.9	10-Jul-2006	0.005	6.6	1.3	<QL	0.004	6.7	2.7	5.3
Jul-06	4.22	10-Aug-2006								
Aug-06	3.08	10-Sep-2006	0.004	7.5	4.6	<5.0	0.004	6.4	3.4	<QL
Sep-06	9.72	10-Oct-2006								
Oct-06	No Data	10-Nov-2006	0.004	6.8	2.1	<QL	0.005	6.4	3.3	32
Nov-06	No Data	10-Dec-2006	0.004	5.6	11	<QL	0.005	4.5	2.2	<QL
Dec-06	1.42	10-Jan-2007								
Jan-07	3.46	10-Feb-2007								
Feb-07	2.06	10-Mar-2007								
Mar-07	2.66	10-Apr-2007								
Apr-07	3.62	10-May-2007	0.004	7.33	1	<QL	0.005	7.32	2.7	10
May-07	3.69	10-Jun-2007								
Jun-07	5.22	10-Jul-2007								
Jul-07	1.69	10-Aug-2007	0.004	6.1	8.2	1	0.005	7.3	4	<QL
Aug-07	0.21	10-Sep-2007								
Sep-07	1.11	10-Oct-2007								
Oct-07	3.54	10-Nov-2007								
Nov-07	0.8	10-Dec-2007								
Dec-07	~3.5	10-Jan-2008	0.004	8.95	11.4	<0.5	0.005	7.49	4.5	<0.5
Jan-08	~2.0	10-Feb-2008								
			90%tile	7.975			90%tile	7.532		
			10%tile	6.15			10%tile	6.278		

	Parameters Reported But Not Required to be Reported					
	Outfall 001			Outfall 002		
Date Reported	Cadmium (mg/L)	Copper (mg/L)	Zinc (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Zinc (mg/L)
10-Jan-05	<0.0005	0.005	0.011	<0.0005	0.01	0.187
10-Jun-05	<0.0005	0.011	0.04	<0.0005	0.007	0.14
10-Jan-06	<0.0005	<0.005	0.021	<0.0005	<0.005	0.021
10-Jul-06	<0.01	<0.01	<0.01	<0.01	<0.01	0.14

AIR WATER & SOIL LABORATORIES, INC.®
2109A North Hamilton Street • Richmond, Virginia 23230 • Tel: (804) 358-8295 Fax: (804) 358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 08020204

Client Name: IMTT
5501 Old Osborne Turnpike
Richmond, VA 23231

Date Received: February 14, 2008
Date Issued: February 22, 2008

Submitted To: Mike Spence
Client Site I.D.: Richmond East

Project Number: NA
Purchase Order: NA

Sample I.D.: Outfall 001 E
Laboratory Sample I.D.: 08020204-001
Date/Time Sampled: 02/14/08 10:55

Parameter	Method	Sample Results	Rep Limit	Analysis Date/Time	Analyst
pH	SM4500-H B	6.4 SU	--	02/14/08 11:13	ETS
The pH measurement was performed outside of the 15 minute holding time.					
Benzene	EPA624	< 10 ug/L	10.0	02/18/08 19:19	DMB
Toluene	EPA624	< 10 ug/L	10.0	02/18/08 19:19	DMB
Ethylbenzene	EPA624	< 10 ug/L	10.0	02/18/08 19:19	DMB
o-Xylene	EPA624	< 10 ug/L	10.0	02/18/08 19:19	DMB
m,p-Xylenes	EPA624	< 20 ug/L	20.0	02/18/08 19:19	DMB
Xylenes, Total	EPA624	< 30 ug/L	30.0	02/18/08 19:19	DMB
TPH-Volatiles (GRO)	SW8015B	< 0.5 mg/L	0.5	02/15/08 18:40	MKD
TPH-Semi-Volatiles (DRO)	SW8015B	1.4 mg/L	0.5	02/15/08 21:21	JHV
Chlorine, Residual	SM4500-Cl G	< 0.1 mg/L	0.1	02/14/08 11:20	ETS
COD	EPA410.4	24.9 mg/L	10.0	02/21/08 10:00	VLG
Oil and Grease	EPA1664A	< 10 mg/L	10.0	02/19/08 10:23	RPF
TSS	SM2540D	6.8 mg/L	1.0	02/19/08 14:59	LG
Total Organic Carbon (TOC)	SM5310C	4.9 mg/L	1.0	02/18/08 14:57	JCW

AIR WATER & SOIL LABORATORIES, INC.®
2109A North Hamilton Street • Richmond, Virginia 23230 • Tel: (804) 358-8295 Fax: (804) 358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 07120253

Client Name: IMTT
5501 Old Osborne Turnpike
Richmond, VA 23231

Date Received: December 18, 2007
Date Issued: December 27, 2007

Submitted To: Mike Spence
Project Number: NA

Client Site I.D.: Richmond Terminal Monthly
Purchase Order: NA

Sample I.D.: Outfall 001 E
Laboratory Sample I.D.: 07120253-003

Date/Time Sampled: 12/18/07 13:50

Parameter	Method	Sample Results	Rep Limit	Analysis Date/Time	Analyst
TPH-Volatiles (GRO)	SW8015B	< 0.5 mg/L	0.5	12/21/07 19:10	MKD
TPH-Semi-Volatiles (DRO)	SW8015B	3.4 mg/L	0.5	12/20/07 16:03	JHV
Ammonia	EPA350.1	< 0.1 mg/L	0.10	12/19/07 13:12	RPF
BOD	SM5210B	10.2 mg/L	2.0	12/26/07 13:50	RPF & LG
COD	EPA410.4	40.6 mg/L	10.0	12/26/07 10:00	VLG
Oil and Grease	EPA1664A	< 10 mg/L	10.0	12/20/07 9:42	RPF
pH	SM4500-H B	7.8 SU	--	12/18/07 17:08	RPF
The pH measurement was performed outside of the 15 minute holding time.					
TSS	SM2540D	9.1 mg/L	1.0	12/21/07 10:25	LG
Total Organic Carbon (TOC)	SM5310C	11.4 mg/L	1.0	12/19/07 14:52	JCW

Ted Soyars

Laboratory Manager

AIR WATER & SOIL LABORATORIES, INC.®
2109A North Hamilton Street • Richmond, Virginia 23230 • Tel: (804) 358-8295 Fax: (804) 358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 08020204

Client Name: IMTT
5501 Old Osborne Turnpike
Richmond, VA 23231

Date Received: February 14, 2008
Date Issued: February 22, 2008

Submitted To: Mike Spence
Client Site I.D : Richmond East

Project Number: NA
Purchase Order: NA

Sample I.D.: Outfall 002 E
Laboratory Sample I.D.: 08020204-002
Date/Time Sampled: 02/14/08 11:10

Parameter	Method	Sample Results	Rep Limit	Analysis Date/Time	Analyst
pH	SM4500-H B	6.7 SU	--	02/14/08 11:15	ETS
The pH measurement was performed outside of the 15 minute holding time.					
Benzene	EPA624	< 10 ug/L	10.0	02/18/08 19:44	DMB
Toluene	EPA624	< 10 ug/L	10.0	02/18/08 19:44	DMB
Ethylbenzene	EPA624	< 10 ug/L	10.0	02/18/08 19:44	DMB
o-Xylene	EPA624	< 10 ug/L	10.0	02/18/08 19:44	DMB
m,p-Xylenes	EPA624	< 20 ug/L	20.0	02/18/08 19:44	DMB
Xylenes, Total	EPA624	< 30 ug/L	30.0	02/18/08 19:44	DMB
TPH-Volatiles (GRO)	SW8015B	< 0.5 mg/L	0.5	02/15/08 19:08	MKD
TPH-Semi-Volatiles (DRO)	SW8015B	< 0.5 mg/L	0.5	02/15/08 21:46	JHV
Chlorine, Residual	SM4500-Cl G	< 0.1 mg/L	0.1	02/14/08 11:22	ETS
COD	EPA410.4	13.8 mg/L	10.0	02/21/08 10:00	VLG
Oil and Grease	EPA1664A	< 10 mg/L	10.0	02/19/08 10:23	RPF
TSS	SM2540D	30.7 mg/L	1.0	02/19/08 14:59	LG
Total Organic Carbon (TOC)	SM5310C	4.4 mg/L	1.0	02/18/08 14:57	JCW

Ted Soyars

Laboratory Manager

AIR WATER & SOIL LABORATORIES, INC.®
2109A North Hamilton Street • Richmond, Virginia 23230 • Tel: (804) 358-8295 Fax: (804) 358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 07120253

Client Name: IMTT
5501 Old Osborne Turnpike
Richmond, VA 23231

Date Received: December 18, 2007
Date Issued: December 27, 2007

Submitted To: Mike Spence
Project Number: NA

Client Site I.D.: Richmond Terminal Monthly
Purchase Order: NA

Sample I.D.: Outfall 001 W
Laboratory Sample I.D.: 07120253-001
Date/Time Sampled: 12/18/07 13:25

Parameter	Method	Sample Results	Rep Limit	Analysis Date/Time	Analyst
TPH-Volatiles (GRO)	SW8015B	< 0.5 mg/L	0.5	12/21/07 18:19	MKD
TPH-Semi-Volatiles (DRO)	SW8015B	13.1 mg/L	0.5	12/20/07 15:11	JHV
Ammonia	EPA350.1	0.13 mg/L	0.10	12/19/07 13:12	RPF
BOD	SM5210B	10.7 mg/L	2.0	12/26/07 13:50	RPF & LG
COD	EPA410.4	82.1 mg/L	10.0	12/26/07 10:00	VLG
Oil and Grease	EPA1664A	< 10 mg/L	10.0	12/20/07 9:42	RPF
pH	SM4500-H B	7.0 SU	--	12/19/07 17:08	RPF
The pH measurement was performed outside of the 15 minute holding time.					
TSS	SM2540D	7.9 mg/L	1.0	12/21/07 10:25	LG
Total Organic Carbon (TOC)	SM5310C	23.7 mg/L	1.0	12/19/07 14:52	JCW

Sample I.D.: Outfall 002 E
Laboratory Sample I.D.: 07120253-002
Date/Time Sampled: 12/18/07 14:05

Parameter	Method	Sample Results	Rep Limit	Analysis Date/Time	Analyst
TPH-Volatiles (GRO)	SW8015B	< 0.5 mg/L	0.5	12/21/07 18:45	MKD
TPH-Semi-Volatiles (DRO)	SW8015B	< 0.5 mg/L	0.5	12/20/07 15:37	JHV
Ammonia	EPA350.1	< 0.1 mg/L	0.10	12/19/07 13:12	RPF
BOD	SM5210B	3.2 mg/L	2.0	12/26/07 13:50	RPF & LG
COD	EPA410.4	16.9 mg/L	10.0	12/26/07 10:00	VLG
Oil and Grease	EPA1664A	< 10 mg/L	10.0	12/20/07 9:42	RPF
pH	SM4500-H B	8.8 SU	--	12/18/07 17:08	RPF
The pH measurement was performed outside of the 15 minute holding time.					
TSS	SM2540D	74.7 mg/L	1.0	12/21/07 10:25	LG
Total Organic Carbon (TOC)	SM5310C	4.5 mg/L	1.0	12/19/07 14:52	JCW

Attachment E

Effluent Limitation Analysis & MSTRANTI Data Source Sheet

MSTRANTI DATA SOURCE REPORT (Outfalls 001 and 002)

Stream Information	
Mean Hardness	All Stream Information is the same as Effluent Information due to lack of flow in receiving water body.
90% Temperature (annual)	
90% Temperature (wet season)	
90% Maximum pH	
10% Maximum pH	
Tier Designation	Flow Frequency Analysis
Stream Flows	
All Data	Flow Frequency Analysis
Mixing Information	
All Data	Dry ditch discharge, 100% mix assumed.
Effluent Information	
Mean Hardness	From effluent data provided for the adjacent facility managed by the same permittee (IMTT-Virginia West)
90% Temperature (annual)	Listed in application as “ambient”. The temperature used in MSTRANTI was taken from stormwater data for another facility (Rehrig International) located in approximately the same area.
90% Maximum pH	DMR data
10% Maximum pH	DMR data
Discharge Flow	Maximum flow reported on past DMR’s.

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: IMTT Virginia - East (001) Permit No.: VA0054291

Receiving Stream: UT to Almond Creek Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information			Stream Flows			Mixing Information			Effluent Information		
Mean Hardness (as CaCO3) =	30.2	mg/L	1Q10 (Annual) =	0	MGD	Annual - 1Q10 Mix =	100	%	Mean Hardness (as CaCO3) =	30.2	mg/L
90% Temperature (Annual) =	25.6	deg C	7Q10 (Annual) =	0	MGD	- 7Q10 Mix =	100	%	90% Temp (Annual) =	25.6	deg C
90% Temperature (Wet season) =	25.6	deg C	30Q10 (Annual) =	0	MGD	- 30Q10 Mix =	100	%	90% Temp (Wet season) =	25.6	deg C
90% Maximum pH =	7.98	SU	1Q10 (Wet season) =	0	MGD	Wet Season - 1Q10 Mix =	100	%	90% Maximum pH =	7.98	SU
10% Maximum pH =	6.15	SU	30Q10 (Wet season)	0	MGD	- 30Q10 Mix =	100	%	10% Maximum pH =	6.15	SU
Tier Designation (1 or 2) =	1		30Q5 =	0	MGD				Discharge Flow =	0.005	MGD
Public Water Supply (PWS) Y/N? =	n		Harmonic Mean =	0	MGD						
Trout Present Y/N? =	n		Annual Average =	0	MGD						
Early Life Stages Present Y/N? =	y										

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Acenapthene	0	--	--	na	2.7E+03	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.7E+03**
Acrolein	0	--	--	na	7.8E+02	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.8E+02**
Acrylonitrile[C]	0	--	--	na	6.6E+00	--	--	na	6.6E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.6E+00**
Aldrin [C]	0	3.0E+00	--	na	1.4E-03	3.0E+00	--	na	1.4E-03	--	--	--	--	--	--	--	--	**3.0E+00**	**--**	**na**	**1.4E-03**
Ammonia-N (mg/l) (Yearly)	0	8.73E+00	1.23E+00	na	--	8.7E+00	1.2E+00	na	--	--	--	--	--	--	--	--	--	**8.7E+00**	**1.2E+00**	**na**	**--**
Ammonia-N (mg/l) (High Flow)	0	8.73E+00	1.23E+00	na	--	8.7E+00	1.2E+00	na	--	--	--	--	--	--	--	--	--	**8.7E+00**	**1.2E+00**	**na**	**--**
Anthracene	0	--	--	na	1.1E+05	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.1E+05**
Antimony	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.3E+03**
Arsenic	o	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	**3.4E+02**	**1.5E+02**	**na**	**--**
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Benzene [C]	0	--	--	na	7.1E+02	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.1E+02**
Benzidine[C]	0	--	--	na	5.4E-03	--	--	na	5.4E-03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**5.4E-03**
Benzo (a) anthracene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.9E-01**
Benzo (b) fluoranthene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.9E-01**
Benzo (k) fluoranthene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.9E-01**
Benzo (a) pyrene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.9E-01**
Bis2-Chloroethyl Ether	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.4E+01**
Bis2-Chloroisopropyl Ether	0	--	--	na	1.7E+05	--	--	na	1.7E+05	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.7E+05**
Bromoform [C]	0	--	--	na	3.6E+03	--	--	na	3.6E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.6E+03**
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	5.2E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**5.2E+03**
Cadmium	0	1.0E+00	4.4E-01	na	--	1.0E+00	4.4E-01	na	--	--	--	--	--	--	--	--	--	**1.0E+00**	**4.4E-01**	**na**	**--**
Carbon Tetrachloride [C]	0	--	--	na	4.4E+01	--	--	na	4.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.4E+01**
Chlordane [C]	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	--	--	--	--	--	--	--	--	**2.4E+00**	**4.3E-03**	**na**	**2.2E-02**
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	**8.6E+05**	**2.3E+05**	**na**	**--**
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	**1.9E+01**	**1.1E+01**	**na**	**--**
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.1E+04**

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Chlorodibromomethane[C]	0	--	--	na	3.4E+02	--	--	na	3.4E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.4E+02**
Chloroform [C]	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.9E+04**
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.3E+03**
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.0E+02**
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	**8.3E-02**	**4.1E-02**	**na**	**--**
Chromium III	0	2.1E+02	2.8E+01	na	--	2.1E+02	2.8E+01	na	--	--	--	--	--	--	--	--	--	**2.1E+02**	**2.8E+01**	**na**	**--**
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	**1.6E+01**	**1.1E+01**	**na**	**--**
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Chrysene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.9E-01**
Copper	0	4.3E+00	3.2E+00	na	--	4.3E+00	3.2E+00	na	--	--	--	--	--	--	--	--	--	**4.3E+00**	**3.2E+00**	**na**	**--**
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.2E+01	5.2E+00	na	2.2E+05	--	--	--	--	--	--	--	--	**2.2E+01**	**5.2E+00**	**na**	**2.2E+05**
DDD [C]	0	--	--	na	8.4E-03	--	--	na	8.4E-03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.4E-03**
DDE [C]	0	--	--	na	5.9E-03	--	--	na	5.9E-03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**5.9E-03**
DDT [C]	0	1.1E+00	1.0E-03	na	5.9E-03	1.1E+00	1.0E-03	na	5.9E-03	--	--	--	--	--	--	--	--	**1.1E+00**	**1.0E-03**	**na**	**5.9E-03**
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	**--**	**1.0E-01**	**na**	**--**
Dibenz(a,h)anthracene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.9E-01**
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.2E+04**
Dichloromethane (Methylene Chloride) [C]	0	--	--	na	1.6E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.6E+04**
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.7E+04**
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.6E+03**
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.6E+03**
3,3-Dichlorobenzidine[C]	0	--	--	na	7.7E-01	--	--	na	7.7E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.7E-01**
Dichlorobromomethane [C]	0	--	--	na	4.6E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.6E+02**
1,2-Dichloroethane [C]	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**9.9E+02**
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.7E+04**
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.4E+05	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.4E+05**
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.9E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.9E+02**
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
1,2-Dichloropropane[C]	0	--	--	na	3.9E+02	--	--	na	3.9E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.9E+02**
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.7E+03**
Dieldrin [C]	0	2.4E-01	5.6E-02	na	1.4E-03	2.4E-01	5.6E-02	na	1.4E-03	--	--	--	--	--	--	--	--	**2.4E-01**	**5.6E-02**	**na**	**1.4E-03**
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.2E+05**
Di-2-Ethylhexyl Phthalate [C]	0	--	--	na	5.9E+01	--	--	na	5.9E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**5.9E+01**
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.3E+03**
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.9E+06	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.9E+06**
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.2E+04**
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.4E+04**
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.7E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.7E+02**
2,4-Dinitrotoluene [C]	0	--	--	na	9.1E+01	--	--	na	9.1E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**9.1E+01**
Dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**na**
1,2-Diphenylhydrazine[C]	0	--	--	na	5.4E+00	--	--	na	5.4E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**5.4E+00**
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	**2.2E-01**	**5.6E-02**	**na**	**2.4E+02**
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	**2.2E-01**	**5.6E-02**	**na**	**2.4E+02**
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.4E+02**
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	--	--	--	--	--	--	--	--	**8.6E-02**	**3.6E-02**	**na**	**8.1E-01**
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	8.1E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.1E-01**

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.9E+04**
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.7E+02**
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.4E+04**
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.0E-02**	**na**	**--**
Heptachlor [C]	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	--	--	--	--	--	--	--	--	**5.2E-01**	**3.8E-03**	**na**	**2.1E-03**
Heptachlor Epoxide[C]	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	--	--	--	--	--	--	--	--	**5.2E-01**	**3.8E-03**	**na**	**1.1E-03**
Hexachlorobenzene[C]	0	--	--	na	7.7E-03	--	--	na	7.7E-03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.7E-03**
Hexachlorobutadiene[C]	0	--	--	na	5.0E+02	--	--	na	5.0E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**5.0E+02**
Hexachlorocyclohexane Alpha-BHC[C]	0	--	--	na	1.3E-01	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.3E-01**
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	na	4.6E-01	--	--	na	4.6E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.6E-01**
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	9.5E-01	na	na	6.3E-01	9.5E-01	--	na	6.3E-01	--	--	--	--	--	--	--	--	**9.5E-01**	**--**	**na**	**6.3E-01**
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.7E+04**
Hexachloroethane[C]	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.9E+01**
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	**--**	**2.0E+00**	**na**	**--**
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.9E-01**
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Isophorone[C]	0	--	--	na	2.6E+04	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.6E+04**
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	**--**	**0.0E+00**	**na**	**--**
Lead	0	2.6E+01	2.9E+00	na	--	2.6E+01	2.9E+00	na	--	--	--	--	--	--	--	--	--	**2.6E+01**	**2.9E+00**	**na**	**--**
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	**--**	**1.0E-01**	**na**	**--**
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	--	--	--	--	--	--	--	--	**1.4E+00**	**7.7E-01**	**na**	**5.1E-02**
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.0E+03**
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	**--**	**3.0E-02**	**na**	**--**
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	**--**	**0.0E+00**	**na**	**--**
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.1E+04**
Nickel	0	6.6E+01	7.4E+00	na	4.6E+03	6.6E+01	7.4E+00	na	4.6E+03	--	--	--	--	--	--	--	--	**6.6E+01**	**7.4E+00**	**na**	**4.6E+03**
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.9E+03**
N-Nitrosodimethylamine[C]	0	--	--	na	8.1E+01	--	--	na	8.1E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.1E+01**
N-Nitrosodiphenylamine[C]	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.6E+02**
N-Nitrosodi-n-propylamine[C]	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.4E+01**
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	**6.5E-02**	**1.3E-02**	**na**	**--**
PCB-1016	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.4E-02**	**na**	**--**
PCB-1221	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.4E-02**	**na**	**--**
PCB-1232	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.4E-02**	**na**	**--**
PCB-1242	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.4E-02**	**na**	**--**
PCB-1248	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.4E-02**	**na**	**--**
PCB-1254	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.4E-02**	**na**	**--**
PCB-1260	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.4E-02**	**na**	**--**
PCB Total[C]	0	--	--	na	1.7E-03	--	--	na	1.7E-03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.7E-03**

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Pentachlorophenol [C]	0	3.7E+00	2.8E+00	na	8.2E+01	3.7E+00	2.8E+00	na	8.2E+01	--	--	--	--	--	--	--	--	**3.7E+00**	**2.8E+00**	**na**	**8.2E+01**
Phenol	0	--	--	na	4.6E+06	--	--	na	4.6E+06	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.6E+06**
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.1E+04**
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Gross Alpha Activity	0	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.5E+01**
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.0E+00**
Strontium-90	0	--	--	na	8.0E+00	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.0E+00**
Tritium	0	--	--	na	2.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.0E+04**
Selenium	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	1.1E+04	--	--	--	--	--	--	--	--	**2.0E+01**	**5.0E+00**	**na**	**1.1E+04**
Silver	0	4.4E-01	--	na	--	4.4E-01	--	na	--	--	--	--	--	--	--	--	--	**4.4E-01**	**--**	**na**	**--**
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.1E+02**
Tetrachloroethylene[C]	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.9E+01**
Thallium	0	--	--	na	6.3E+00	--	--	na	6.3E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.3E+00**
Toluene	0	--	--	na	2.0E+05	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.0E+05**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Toxaphene [C]	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	7.5E-03	--	--	--	--	--	--	--	--	**7.3E-01**	**2.0E-04**	**na**	**7.5E-03**
Tributyltin	0	4.6E-01	6.3E-02	na	--	4.6E-01	6.3E-02	na	--	--	--	--	--	--	--	--	--	**4.6E-01**	**6.3E-02**	**na**	**--**
1,2,4-Trichlorobenzene	0	--	--	na	9.4E+02	--	--	na	9.4E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**9.4E+02**
1,1,2-Trichloroethane[C]	0	--	--	na	4.2E+02	--	--	na	4.2E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.2E+02**
Trichloroethylene [C]	0	--	--	na	8.1E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.1E+02**
2,4,6-Trichlorophenol [C]	0	--	--	na	6.5E+01	--	--	na	6.5E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.5E+01**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Vinyl Chloride[C]	0	--	--	na	6.1E+01	--	--	na	6.1E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.1E+01**
Zinc	0	4.2E+01	4.3E+01	na	6.9E+04	4.2E+01	4.3E+01	na	6.9E+04	--	--	--	--	--	--	--	--	**4.2E+01**	**4.3E+01**	**na**	**6.9E+04**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	4.3E+03
Arsenic	9.0E+01
Barium	na
Cadmium	2.7E-01
Chromium III	1.7E+01
Chromium VI	6.4E+00
Copper	1.7E+00
Iron	na
Lead	1.8E+00
Manganese	na
Mercury	5.1E-02
Nickel	4.4E+00
Selenium	3.0E+00
Silver	1.8E-01
Zinc	1.7E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: IMTT Virginia - East (002) Permit No.: VA0054291

Receiving Stream: UT to Almond Creek Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		
Mean Hardness (as CaCO3) =	30.2	mg/L
90% Temperature (Annual) =	25.6	deg C
90% Temperature (Wet season) =	25.6	deg C
90% Maximum pH =	7.5	SU
10% Maximum pH =	6.3	SU
Tier Designation (1 or 2) =	1	
Public Water Supply (PWS) Y/N? =	n	
Trout Present Y/N? =	n	
Early Life Stages Present Y/N? =	y	

Stream Flows		
1Q10 (Annual) =	0	MGD
7Q10 (Annual) =	0	MGD
30Q10 (Annual) =	0	MGD
1Q10 (Wet season) =	0	MGD
30Q10 (Wet season)	0	MGD
30Q5 =	0	MGD
Harmonic Mean =	0	MGD
Annual Average =	0	MGD

Mixing Information		
Annual - 1Q10 Mix =	100	%
- 7Q10 Mix =	100	%
- 30Q10 Mix =	100	%
Wet Season - 1Q10 Mix =	100	%
- 30Q10 Mix =	100	%

Effluent Information		
Mean Hardness (as CaCO3) =	30.2	mg/L
90% Temp (Annual) =	25.6	deg C
90% Temp (Wet season) =	25.6	deg C
90% Maximum pH =	7.5	SU
10% Maximum pH =	6.3	SU
Discharge Flow =	0.005	MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Acenapthene	0	--	--	na	2.7E+03	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.7E+03**
Acrolein	0	--	--	na	7.8E+02	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.8E+02**
Acrylonitrile[C]	0	--	--	na	6.6E+00	--	--	na	6.6E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.6E+00**
Aldrin [C]	0	3.0E+00	--	na	1.4E-03	3.0E+00	--	na	1.4E-03	--	--	--	--	--	--	--	--	**3.0E+00**	**--**	**na**	**1.4E-03**
Ammonia-N (mg/l) (Yearly)	0	1.99E+01	2.14E+00	na	--	2.0E+01	2.1E+00	na	--	--	--	--	--	--	--	--	--	**2.0E+01**	**2.1E+00**	**na**	**--**
Ammonia-N (mg/l) (High Flow)	0	1.99E+01	2.14E+00	na	--	2.0E+01	2.1E+00	na	--	--	--	--	--	--	--	--	--	**2.0E+01**	**2.1E+00**	**na**	**--**
Anthracene	0	--	--	na	1.1E+05	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.1E+05**
Antimony	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.3E+03**
Arsenic	o	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	**3.4E+02**	**1.5E+02**	**na**	**--**
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Benzene [C]	0	--	--	na	7.1E+02	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.1E+02**
Benzidine[C]	0	--	--	na	5.4E-03	--	--	na	5.4E-03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**5.4E-03**
Benzo (a) anthracene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.9E-01**
Benzo (b) fluoranthene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.9E-01**
Benzo (k) fluoranthene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.9E-01**
Benzo (a) pyrene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.9E-01**
Bis2-Chloroethyl Ether	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.4E+01**
Bis2-Chloroisopropyl Ether	0	--	--	na	1.7E+05	--	--	na	1.7E+05	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.7E+05**
Bromoform [C]	0	--	--	na	3.6E+03	--	--	na	3.6E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.6E+03**
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	5.2E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**5.2E+03**
Cadmium	0	1.0E+00	4.4E-01	na	--	1.0E+00	4.4E-01	na	--	--	--	--	--	--	--	--	--	**1.0E+00**	**4.4E-01**	**na**	**--**
Carbon Tetrachloride [C]	0	--	--	na	4.4E+01	--	--	na	4.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.4E+01**
Chlordane [C]	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	--	--	--	--	--	--	--	--	**2.4E+00**	**4.3E-03**	**na**	**2.2E-02**
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	**8.6E+05**	**2.3E+05**	**na**	**--**
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	**1.9E+01**	**1.1E+01**	**na**	**--**
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.1E+04**

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Chlorodibromomethane[C]	0	--	--	na	3.4E+02	--	--	na	3.4E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.4E+02**
Chloroform [C]	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.9E+04**
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.3E+03**
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.0E+02**
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	**8.3E-02**	**4.1E-02**	**na**	**--**
Chromium III	0	2.1E+02	2.8E+01	na	--	2.1E+02	2.8E+01	na	--	--	--	--	--	--	--	--	--	**2.1E+02**	**2.8E+01**	**na**	**--**
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	**1.6E+01**	**1.1E+01**	**na**	**--**
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Chrysene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.9E-01**
Copper	0	4.3E+00	3.2E+00	na	--	4.3E+00	3.2E+00	na	--	--	--	--	--	--	--	--	--	**4.3E+00**	**3.2E+00**	**na**	**--**
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.2E+01	5.2E+00	na	2.2E+05	--	--	--	--	--	--	--	--	**2.2E+01**	**5.2E+00**	**na**	**2.2E+05**
DDD [C]	0	--	--	na	8.4E-03	--	--	na	8.4E-03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.4E-03**
DDE [C]	0	--	--	na	5.9E-03	--	--	na	5.9E-03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**5.9E-03**
DDT [C]	0	1.1E+00	1.0E-03	na	5.9E-03	1.1E+00	1.0E-03	na	5.9E-03	--	--	--	--	--	--	--	--	**1.1E+00**	**1.0E-03**	**na**	**5.9E-03**
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	**--**	**1.0E-01**	**na**	**--**
Dibenz(a,h)anthracene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.9E-01**
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.2E+04**
Dichloromethane (Methylene Chloride) [C]	0	--	--	na	1.6E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.6E+04**
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.7E+04**
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.6E+03**
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.6E+03**
3,3-Dichlorobenzidine[C]	0	--	--	na	7.7E-01	--	--	na	7.7E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.7E-01**
Dichlorobromomethane [C]	0	--	--	na	4.6E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.6E+02**
1,2-Dichloroethane [C]	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**9.9E+02**
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.7E+04**
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.4E+05	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.4E+05**
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.9E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.9E+02**
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
1,2-Dichloropropane[C]	0	--	--	na	3.9E+02	--	--	na	3.9E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.9E+02**
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.7E+03**
Dieldrin [C]	0	2.4E-01	5.6E-02	na	1.4E-03	2.4E-01	5.6E-02	na	1.4E-03	--	--	--	--	--	--	--	--	**2.4E-01**	**5.6E-02**	**na**	**1.4E-03**
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.2E+05**
Di-2-Ethylhexyl Phthalate [C]	0	--	--	na	5.9E+01	--	--	na	5.9E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**5.9E+01**
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.3E+03**
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.9E+06	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.9E+06**
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.2E+04**
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.4E+04**
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.7E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.7E+02**
2,4-Dinitrotoluene [C]	0	--	--	na	9.1E+01	--	--	na	9.1E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**9.1E+01**
Dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**na**
1,2-Diphenylhydrazine[C]	0	--	--	na	5.4E+00	--	--	na	5.4E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**5.4E+00**
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	**2.2E-01**	**5.6E-02**	**na**	**2.4E+02**
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	**2.2E-01**	**5.6E-02**	**na**	**2.4E+02**
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.4E+02**
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	--	--	--	--	--	--	--	--	**8.6E-02**	**3.6E-02**	**na**	**8.1E-01**
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	8.1E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.1E-01**

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.9E+04**
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.7E+02**
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.4E+04**
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.0E-02**	**na**	**--**
Heptachlor [C]	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	--	--	--	--	--	--	--	--	**5.2E-01**	**3.8E-03**	**na**	**2.1E-03**
Heptachlor Epoxide[C]	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	--	--	--	--	--	--	--	--	**5.2E-01**	**3.8E-03**	**na**	**1.1E-03**
Hexachlorobenzene[C]	0	--	--	na	7.7E-03	--	--	na	7.7E-03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.7E-03**
Hexachlorobutadiene[C]	0	--	--	na	5.0E+02	--	--	na	5.0E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**5.0E+02**
Hexachlorocyclohexane Alpha-BHC[C]	0	--	--	na	1.3E-01	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.3E-01**
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	na	4.6E-01	--	--	na	4.6E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.6E-01**
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	9.5E-01	na	na	6.3E-01	9.5E-01	--	na	6.3E-01	--	--	--	--	--	--	--	--	**9.5E-01**	**--**	**na**	**6.3E-01**
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.7E+04**
Hexachloroethane[C]	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.9E+01**
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	**--**	**2.0E+00**	**na**	**--**
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.9E-01**
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Isophorone[C]	0	--	--	na	2.6E+04	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.6E+04**
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	**--**	**0.0E+00**	**na**	**--**
Lead	0	2.6E+01	2.9E+00	na	--	2.6E+01	2.9E+00	na	--	--	--	--	--	--	--	--	--	**2.6E+01**	**2.9E+00**	**na**	**--**
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	**--**	**1.0E-01**	**na**	**--**
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	--	--	--	--	--	--	--	--	**1.4E+00**	**7.7E-01**	**na**	**5.1E-02**
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.0E+03**
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	**--**	**3.0E-02**	**na**	**--**
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	**--**	**0.0E+00**	**na**	**--**
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.1E+04**
Nickel	0	6.6E+01	7.4E+00	na	4.6E+03	6.6E+01	7.4E+00	na	4.6E+03	--	--	--	--	--	--	--	--	**6.6E+01**	**7.4E+00**	**na**	**4.6E+03**
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.9E+03**
N-Nitrosodimethylamine[C]	0	--	--	na	8.1E+01	--	--	na	8.1E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.1E+01**
N-Nitrosodiphenylamine[C]	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.6E+02**
N-Nitrosodi-n-propylamine[C]	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.4E+01**
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	**6.5E-02**	**1.3E-02**	**na**	**--**
PCB-1016	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.4E-02**	**na**	**--**
PCB-1221	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.4E-02**	**na**	**--**
PCB-1232	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.4E-02**	**na**	**--**
PCB-1242	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.4E-02**	**na**	**--**
PCB-1248	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.4E-02**	**na**	**--**
PCB-1254	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.4E-02**	**na**	**--**
PCB-1260	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	**--**	**1.4E-02**	**na**	**--**
PCB Total[C]	0	--	--	na	1.7E-03	--	--	na	1.7E-03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.7E-03**

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Pentachlorophenol [C]	0	4.3E+00	3.3E+00	na	8.2E+01	4.3E+00	3.3E+00	na	8.2E+01	--	--	--	--	--	--	--	--	**4.3E+00**	**3.3E+00**	**na**	**8.2E+01**
Phenol	0	--	--	na	4.6E+06	--	--	na	4.6E+06	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.6E+06**
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.1E+04**
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Gross Alpha Activity	0	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.5E+01**
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.0E+00**
Strontium-90	0	--	--	na	8.0E+00	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.0E+00**
Tritium	0	--	--	na	2.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.0E+04**
Selenium	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	1.1E+04	--	--	--	--	--	--	--	--	**2.0E+01**	**5.0E+00**	**na**	**1.1E+04**
Silver	0	4.4E-01	--	na	--	4.4E-01	--	na	--	--	--	--	--	--	--	--	--	**4.4E-01**	**--**	**na**	**--**
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.1E+02**
Tetrachloroethylene[C]	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.9E+01**
Thallium	0	--	--	na	6.3E+00	--	--	na	6.3E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.3E+00**
Toluene	0	--	--	na	2.0E+05	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.0E+05**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Toxaphene [C]	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	7.5E-03	--	--	--	--	--	--	--	--	**7.3E-01**	**2.0E-04**	**na**	**7.5E-03**
Tributyltin	0	4.6E-01	6.3E-02	na	--	4.6E-01	6.3E-02	na	--	--	--	--	--	--	--	--	--	**4.6E-01**	**6.3E-02**	**na**	**--**
1,2,4-Trichlorobenzene	0	--	--	na	9.4E+02	--	--	na	9.4E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**9.4E+02**
1,1,2-Trichloroethane[C]	0	--	--	na	4.2E+02	--	--	na	4.2E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.2E+02**
Trichloroethylene [C]	0	--	--	na	8.1E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**8.1E+02**
2,4,6-Trichlorophenol [C]	0	--	--	na	6.5E+01	--	--	na	6.5E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.5E+01**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Vinyl Chloride[C]	0	--	--	na	6.1E+01	--	--	na	6.1E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.1E+01**
Zinc	0	4.2E+01	4.3E+01	na	6.9E+04	4.2E+01	4.3E+01	na	6.9E+04	--	--	--	--	--	--	--	--	**4.2E+01**	**4.3E+01**	**na**	**6.9E+04**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	4.3E+03
Arsenic	9.0E+01
Barium	na
Cadmium	2.7E-01
Chromium III	1.7E+01
Chromium VI	6.4E+00
Copper	1.7E+00
Iron	na
Lead	1.8E+00
Manganese	na
Mercury	5.1E-02
Nickel	4.4E+00
Selenium	3.0E+00
Silver	1.8E-01
Zinc	1.7E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

4/28/2008 10:50:52 AM

Facility = IMTT-Virginia East (Outfall 001)
Chemical = Zinc
Chronic averaging period = 4
WLAa = 42
WLAc = 43
Q.L. = 10
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 4
Expected Value = 16.9513
Variance = 103.445
C.V. = 0.6
97th percentile daily values = 41.2496
97th percentile 4 day average = 28.2034
97th percentile 30 day average= 20.4442
< Q.L. = 1
Model used = BPJ Assumptions, Type 1 data

No Limit is required for this material

The data are:

11
40
21
0

4/28/2008 11:23:53 AM

Facility = IMTT-Virginia East (Outfall 001)
Chemical = Copper
Chronic averaging period = 4
WLAa = 4.3
WLAc = 3.2
Q.L. = 5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 7.44178
Variance = 19.9368
C.V. = 0.6
97th percentile daily values = 18.1089
97th percentile 4 day average = 12.3815
97th percentile 30 day average= 8.97518
< Q.L. = 1
Model used = BPJ Assumptions, Type 1 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 4.3
Average Weekly limit = 4.3
Average Monthly LImit = 4.3

The data are:

5
11
0

11/20/2008 3:08:57 PM

Facility = IMTT Virginia-East (Outfall 002)
Chemical = Zinc
Chronic averaging period = 4
WLAa = 42
WLAc = 43
Q.L. = 21
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 4
Expected Value = 122
Variance = 5358.24
C.V. = 0.6
97th percentile daily values = 296.876
97th percentile 4 day average = 202.982
97th percentile 30 day average= 147.138
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 42
Average Weekly limit = 42
Average Monthly LImit = 42

The data are:

187
140
21
140

4/28/2008 11:25:42 AM

Facility = IMTT-Virginia East (Outfall 002)
Chemical = Copper
Chronic averaging period = 4
WLAa = 4.3
WLAc = 3.2
Q.L. = 5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 3
Expected Value = 7.44178
Variance = 19.9368
C.V. = 0.6
97th percentile daily values = 18.1089
97th percentile 4 day average = 12.3815
97th percentile 30 day average= 8.97518
< Q.L. = 1
Model used = BPJ Assumptions, Type 1 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 4.3
Average Weekly limit = 4.3
Average Monthly LImit = 4.3

The data are:

10
7
0

Attachment F

Name Change Correspondence, NPDES Permit Rating Worksheet

NPDES PERMIT RATING WORK SHEET

☐ Regular Addition
☐ DiscretionaryAddition
☐ Score change, but no status change
☐ Deletion

NPDES NO. VA0054291

Facility Name: IMTT-Virginia East

City: Richmond

Receiving Water: Unnamed Tributary to Almond Creek

Reach Number: _____

Is this facility a steam electric power plant (SIC=4911) with one or more of the following characteristics?
1. Power output 500 MW or greater (not using a cooling pond/lake)
2. A nuclear power plant
3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate

☐ YES; score is 600 (stop here) ☐ NO (continue)

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

☐ YES; score is 700 (stop here)
☐ NO (continue)

FACTOR 1: Toxic Pollutant Potential

PCS SIC Code: _____ Primary SIC Code: 4226 Other SIC Codes: NONE
Industrial Subcategory Code: _____ (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
☐ No process waste streams	0	0	☐ 3.	3	15	☐ 7.	7	35
X 1.	1	5	☐ 4.	4	20	☐ 8.	8	40
☐ 2.	2	10	☐ 5.	5	25	☐ 9.	9	45
			☐ 6.	6	30	☐ 10.	10	50

Code Number Checked: 1

Total Points Factor 1: 5

FACTOR 2: Flow/Stream Flow Volume (*Complete either Section A or Section B; check only one)*

Section A ☐ Wastewater Flow Only Considered

Wastewater Type (See Instructions)		Code	Points
Type I: Flow < 5 MGD	☐	11	0
Flow 5 to 10 MGD	☐	12	10
Flow > 10 to 50 MGD	☐	13	20
Flow > 50 MGD	☐	14	30
Type II: Flow < 1 MGD	☐	21	10
Flow 1 to 5 MGD	☐	22	20
Flow > 5 to 10 MGD	☐	23	30
Flow > 10 MGD	☐	24	50
Type III: Flow < 1 MGD	☐	31	0
Flow 1 to 5 MGD	☐	32	10
Flow > 5 to 10 MGD	☐	33	20
Flow > 10 MGD	☐	34	30

Section B ☐ Wastewater and Stream Flow Considered

Wastewater Type (See Instructions)	Percent of instream Wastewater Concentration at Receiving Stream Low Flow		Code	Points
Type I/III:	< 10 %	☐	41	0
	10 % to < 50 %	☐	42	10
	> 50 %	☐	43	20
Type II:	< 10 %	☐	51	0
	10 % to <50 %	☐	52	20
	> 50 %	**X**	53	30

Code Checked from Section A or B: 53

Total Points Factor 2: 30

FACTOR 3: Conventional Pollutants NPDES NO: VA0054291

(only when limited by the permit)

A. Oxygen Demanding Pollutant: (check one) | |BOD ☐ COD ☐ Other:_____

			Code	*Points*
Permit Limits: (check one)	☐	< 100 lbs/day	1	0
	☐	100 to 1000 lbs/day	2	5
	☐	> 1000 to 3000 lbs/day	3	15
	☐	> 3000 lbs/day	4	20

Code Checked: 1

Points Scored: 0

B. Total Suspended Solids (TSS)

			Code	*Points*
Permit Limits: (check one)	☐	< 100 lbs/day	1	0
	☐	100 to 1000 lbs/day	2	5
	☐	> 1000 to 5000 lbs/day	3	15
	☐	> 5000 lbs/day	4	20

Code Checked: 1

Points Scored: 0

C. Nitrogen Pollutant: (check one) ☐ Ammonia ☐ Other: _____

		Nitrogen Equivalent	*Code*	*Points*
Permit Limits: (check one)	☐	< 300 lbs/day	1	0
	☐	300 to 1000 lbs/day	2	5
	☐	> 1000 to 3000 lbs/day	3	15
	☐	> 3000 lbs/day	4	20

Code Checked: 1

Points Scored: 0

Total Points Factor 3: 0

FACTOR 4: Public Health Impact

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this includes any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above referenced supply.

X YES (If yes, check toxicity potential number below)

☐ NO (If no, go to Factor 5)

Determine the *human health* toxicity potential from Appendix A. Use the same SIC code and subcategory reference as in Factor 1. (Be sure to use the human health toxicity group column ☐ check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
☐ No process waste streams	0	0	☐ 3.	3	0	☐ 7.	7	15
X 1.	1	0	☐ 4.	4	0	☐ 8.	8	20
☐ 2.	2	0	☐ 5.	5	5	☐ 9.	9	25
			☐ 6.	6	10	☐ 10.	10	30

Code Number Checked: 1

Total Points Factor 4: 0

FACTOR 5: Water Quality Factors NPDES NO: VA0054291

A. Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines, or technology-based state effluent guidelines), or has a wasteload allocation been assigned to the discharge:

		Code	Points
X	Yes	1	10
☐	No	2	0

B. Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?

		Code	Points
X	Yes	1	0
☐	No	2	5

C. Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?

		Code	Points
X	Yes	1	10
	No	2	0

Code Number Checked: A 1 B 1 C 1

Points Factor 5: A 10 + B 0 + C 10 = 20 TOTAL

FACTOR 6: Proximity to Near Coastal Waters

A. Base Score: Enter flow code here (from Factor 2): 53 *Enter the multiplication factor that corresponds to the flow code:* 0.60

Check appropriate facility HPRI Code (from PCS):

	HPRI#	*Code*	*HPRI Score*
☐	1	1	20
☐	2	2	0
☐	3	3	30
X	4	4	0
☐	5	5	20

HPRI code checked: 4

Flow Code	*Multiplication Factor*
11, 31, or 41	0.00
12, 32, or 42	0.05
13, 33, or 43	0.10
14 or 34	0.15
21 or 51	0.10
22 or 52	0.30
23 or 53	0.60
24	1.00

Base Score: (HPRI Score) 0 X (Multiplication Factor) 0.6 = 0 (TOTAL POINTS)

B. Additional Points ☐ NEP Program
For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

	Code	Points
☐ Yes	1	10
☐ No	2	0

C. Additional Points ☐ Great Lakes Area of Concern
For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 areas of concern (see Instructions)

	Code	Points
☐ Yes	1	10
☐ No	2	0

Code Number Checked: A 4 B 1 C N/A

Points Factor 6: A 0 + B 0 + C 0 = 0 TOTAL

SCORE SUMMARY NPDES NO: VA0054291

Factor	Description	Total Points
1	Toxic Pollutant Potential	5
2	Flows/Streamflow Volume	30
3	Conventional Pollutants	0
4	Public Health Impacts	0
5	Water Quality Factors	20
6	Proximity to Near Coastal Waters	0
	TOTAL (Factors 1 through 6)	55

S1. Is the total score equal to or greater than 80? ☐ Yes (Facility is a major) X No

S2. If the answer to the above questions is no, would you like this facility to be discretionary major?

X No

☐ Yes (Add 500 points to the above score and provide reason below:

Reason:

NEW SCORE: _____

OLD SCORE: _____

Jeremy Kazio
Permit Reviewer's Name

(804) 527-5044
Phone Number

March 28, 2008
Date

IMTT – Richmond

A PARTNERSHIP

Terminal Address: 5500 Old Osborne Turnpike, Richmond, Virginia 23231 • **Phone:** (804) 226 - 2650• **Fax:** (804) 226 – 2653

December 14, 2007

VIA First Class Mail
Mr. Jeremy Kazio
Virginia DEQ, Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060

Re: IMTT-Richmond Permits VA0055409 and VA0054291

Dear Mr. Kazio:

IMTT-Richmond currently holds VPDES permit # VA0055409 and VA0054291 for the discharge of wastewater from its Richmond West and East Terminals, respectively. In addition, IMTT-Richmond has timely applied for renewal of these permits, and such applications are still pending. As you are aware, the corporate structures of IMTT-Richmond and its sister partnership, IMTT-Chesapeake, are being reorganized. The general partners of both partnerships are all subsidiaries of a single corporation, IMTT Holdings, Inc. As part of this restructuring, IMTT-Richmond will be merged with and into IMTT-Chesapeake. Subsequently, IMTT-Chesapeake will change its name to IMTT-Virginia to reflect the fact that the merged partnership will hold assets throughout the state.

This reorganization will not result in any changes to the current operations at the Richmond Terminals. As a result, we are requesting a transfer of permit # VA0055409 and VA0054291 from IMTT-Richmond to IMTT-Virginia effective January 1, 2008, the date on which IMTT-Virginia will become responsible for operations at the Richmond West and East Terminals.

We understand that instead of reissuing the current permits in the name of IMTT-Virginia, DEQ will instead note the ownership change in the file, and issue the permit renewals in the name of IMTT-

Virginia in February of 2008. We agree with this approach, so long as you can confirm that IMTT-Virginia may legally operate pursuant to the current permits for the period beginning on January 1, 2008 to the time that the permits are renewed. Thank you for your attention to this matter, and please contact me with any questions or if you need additional information.

Sincerely,

Michael T. Spence
Terminal Manager

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE
4949-A Cox Road, Glen Allen, Virginia 23060
(804) 527-5020 Fax (804) 527-5106
www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

Gerard Seeley, Jr.
Regional Director

IMTT-Virginia
5500 Old Osborne Turnpike
Richmond, VA 23231

Attn: Michael T. Spence, Terminal Manager

RE: Facility Name Change – IMTT-Richmond West/East (VPDES Permit No. VA0055409 and VA0054291) to IMTT-Virginia

Dear Mr. Spence:

Your VPDES permit and fact sheet will be modified upon permit reissuance in accordance with your letter dated December 14, 2007. The modification will consist of changing the facility owner name and facility name on the permit and fact sheet as follows:

VPDES Permit No. VA0055409	VPDES Permit No. VA0054291
From: Current Permit (Issued February 4, 2003/Expires February 3, 2008) Owner: International Matex Tank Terminals Facility Name: IMTT- Richmond West **To:** Permit Reissuance Owner: IMTT Holdings, Inc. Facility Name: IMTT-Virginia West	**From:** Current Permit (Issued May 21, 2003/Expires May 20, 2008) Owner: International Matex Tank Terminals Facility Name: IMTT-Richmond East **To:** Permit Reissuance Owner: IMTT Holdings, Inc. Facility Name: IMTT-Virginia East

Both the Department of Environmental Quality (DEQ) and you, the permittee, have agreed that it is more efficient, due to the proximity of the current permits' expiration, to make the name changes referenced above to each permit during the permit reissuance. Each of the facilities' 2008 permit reissuance applications have been received and are pending review for completeness.

Under these circumstances, DEQ approves the legal operation of each facility under the new names from the date of January 1, 2008 until the time of each respective permit's reissuance.

If you have any questions regarding this decision, please contact me at (804) 527-5044 or jskazio@deq.virginia.gov.

Sincerely,

Jeremy Kazio
Environmental Specialist II

Attachment G

WET Information and Correspondence

Persons may comment in writing or by e-mail to the DEQ on the proposed reissuance of the permit, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The Director of the DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed reissuance. This determination will become effective, unless the Director grants a public hearing. Due notice of any public hearing will be given.

23. Additional Comments:

Previous Board Action: None

Staff Comments:

a. Stormwater regulations do not apply to this facility because no vehicle maintenance activities or equipment cleaning operations are performed on site.
b. The reduction in monitoring frequency was not applied as required per permit guidance because monitoring frequencies for discharges that are intermittent or short term cannot be assessed or reduced. These outfalls are by their nature intermittent.
c. The discharge is not controversial and is currently meeting the required effluent limitations.
d. An instream impact study memorandum was completed on May 18, 1995. See **Attachment G.** The conclusions made in this memorandum were that outfall 001 discharges initially to an ephemeral stream that makes its way to an intermittent stream, of which the effluent from outfall 001 constitutes approximately 3% of the volume of the intermittent stream during a significant rainfall event. The final fate of the discharge is a privately owned pond. There was no evidence to suggest that a direct connection exists between the pond and the Almond Creek. The recommendation in this memorandum suggested that although the study calculated a dilution of 3% effluent in the intermittent stream, a 50% effluent concentration should be used for defining an acceptable test endpoint. This endpoint was met in several testing episodes by the permittee. Therefore, in the previous permit cycle, no whole effluent toxicity testing was required for 001. Since it does not appear that any changes have been made at the facility that would change the conclusions reached in the previous permit cycle, whole effluent toxicity testing was not added into this permit renewal. Since whole effluent toxicity testing was not included, Appendix A monitoring was also not included in this permit cycle.

Reasoning for excluding WET testing from 2003 permit.

e. The attached Site Visit memorandum dated 11/19/2002 **(Attachment C)** notes that some type of testing may be appropriate for the effluent of the oil water separator due to its poor condition. After reviewing the information described in d. above, further testing was not added to the permit for two reasons. First the instream impact study noted that the oil water separator discharges to an ephemeral stream, not capable of sustaining flora or fauna. Therefore, evaluating the toxicity of the effluent to this stream is a moot point since the stream will not sustain life. Secondly, the study notes that the ephemeral stream discharges to an intermittent stream, of which the oil water separator discharge is about 3% of the volume. The intermittent stream ends at a private pond, in which the oil water separator discharge is negligible. Therefore it is doubtful that any toxicity of the oil water separator effluent will effect the private pond. Further toxicity testing data would therefore not be useful since the instream impact study shows so little impact from this oil water separator to its receiving streams and water bodies.
f. The QL limitation for Total Xylenes (6.0 ug/l) originated from guidance received from Central Office.
g. Under B.7. for hydrostatic testing, the current guidance from the permitting manual indicates the use of a formula requiring hardness data to determine the total recoverable lead emission limitation. A hardness of 50 was used in the calculation to approximate the worst case hardness for potable water, which is the type of water used by this facility in hydrostatic testing. From a hardness of 50, the value of 49 ug/l of total recoverable lead was calculated for the standard.

Public Comment: No public comments were received.

24. 303(d) Listed Segments (TMDL):
This facility does not discharge to a 303(d)-listed segment.

Excerpt from fact sheet dated 4/15/98

16. Additional Comments, continued:

f. A Toxics Management Program was required in the permit reissued effective May 18, 1993. After four of the required eight tests had been performed, DEQ staff prepared a memo dated August 2, 1994 recommending that IMTT proceed with Toxicity Reduction efforts on the discharge from Outfall 001, which showed significant toxicity in all four tests. Outfall 002 was determined to be non-toxic (all LC50's > 100% effluent). IMTT had the oil/water separator cleaned, inspected, and repaired and also performed an Instream Impact Study in lieu of proceeding directly to a Toxicity Reduction Evaluation. The results of the Instream Impact Study showed that during a large storm event the Instream Waste Concentration of Outfall 001 would be 3% of the ephemeral receiving stream, which flows to a small pond with no outlet. DEQ staff issued a memo dated May 18, 1995 which stated, "the permittee has adequately demonstrated that there is no adverse impact from the discharge on all reasonable and beneficial uses of State waters, and a TRE is not justified". The memo also recommended annual acute testing of the discharges, with LC50's of less than 50% effluent as the endpoint for toxicity at Outfall 001. All subsequent toxicity tests on Outfall 001 resulted in LC50's greater than 50% effluent. Based on these results from the TMP in the current permit, there is no need to continue requirements for toxicity testing in the new permit. Therefore, a Toxics Management Program is not included in this draft. See Attachment 3 for detailed documentation.

g. Appendix A Monitoring is not required in the new permit because a Toxics Management Program is not needed.

M E M O R A N D U M

Piedmont Regional Office, Water Division
Department of Environmental Quality
4900 Cox Road, Glen Allen, Virginia 23060

SUBJECT: INSTREAM IMPACT STUDY - International Matex Tank Terminal, Permit #VA0054291.

TO: J.R. Bell, Jr., PRO

FROM: Mason Harper, PRO J.M.H

DATE: May 18, 1995

COPIES: C. Cooke, PRO; File

BACKGROUND:

International Matex Tank Terminal (IMTT), is a special warehousing and storage facility for #2 and #6 fuel oil in Henrico County. The product is stored in a total of four above ground storage tanks, ranging in size between 2.4 and 3.8 million gallons. There are two permitted outfalls, 001 and 002, which discharge to Almond Creek. Outfall 001 consists of contaminated stormwater and wastewater from a tank truck loading area. Effluent from this area is treated by an oil water separator prior to discharge. Stormwater runoff from the bermed tank field area flows to a drainage outside the terminal and discharges via outfall 002.

When the permit was last reissued on May 18, 1993, a Toxics Management Program (TMP) was included. The TMP required semi-annual toxicity tests using Ceriodaphnia dubia and Pimephales promelas be performed for a period of two years using effluent from outfalls 001 and 002. Concurrent chemical analyses were also required for each outfall.

The first three sets of acute tests conducted on outfall 001 indicated the effluent to be highly toxic to both indicator organisms (see Table 1. below). In an August 2, 1994, TMP review of those tests I recommended that outfall 001 be placed in a Toxicity Reduction Evaluation (TRE). After receiving a copy of the data review memorandum the facility requested that they be given the opportunity to conduct additional toxicity testing allowed by the TMP prior to entering into a formal TRE. The additional tests would be conducted subsequent to performing cleaning and maintenance on the oil/water separator, and would be evaluated along with the prior tests to determine if the decision criterion of the Toxics Management Regulation for acute toxicity was met. I agreed to postpone TRE initiation pending review of additional tests.

After cleaning the oil/water separator, toxicity tests were performed using three separate effluent samples. Results of these tests indicated that effluent quality improved as a result of the recently instituted separator BMPs (see Table 2. below). The one

effluent, indicating the effluent was no longer toxic to that organism. However, LC50 results were still below 100% effluent for the fathead minnow, defined by the TMP as being a passing test.

The permittee then decided to exercise their option of conducting an instream impact study in lieu of a TRE. I concurred with this approach, but advised the permittee that a TRE might still be necessary depending on the study results.

DISCUSSION/CONCLUSIONS:

The study conducted by IMTT-Richmond had several components. The first goal of the study was assessing the impact of the discharge on the unnamed tributary to Almond Creek cited in the permit as the receiving stream. Another aspect of the study was calculating the dilution available based on rainfall and drainage area. Since some question exists on whether the receiving stream (unnamed trib) flows to Almond Creek, a dye study was also incorporated to determine the fate of the oil/water separator discharge. The Instream Impact Study submitted by IMTT had the following conclusions:

1) The initial receiving stream (drainage swale) is an ephemeral stream and can not support aquatic flora or fauna.

2) A discharge occurring in the drainage swale flows west and then south until reaching a topographic low area by Route 5. A culvert is located at this low area to allow water to be diverted to an intermittent stream to the southwest. During a signifigant rainfall event, the oil/water separator discharge would constitute approximately 3% of the intermittent stream.

3) The dye study indicated that the final fate of the discharge is a privately owned pond located 40 yards from where the discharge meets the intermittent stream. There is no evidence to suggest that a direct connection exists between the pond and Almond Creek. Upon entering the pond, the percent of the discharge would be negligible.

Based on the above conclusions, I believe the permittee has adequately demonstrated that there is no adverse impact from the discharge on all reasonable and beneficial uses of State waters, and a TRE is not justified at this time. However, monitoring requirements of the permit's TMP must still be performed.

RECOMMENDATIONS:

I recommend that the facility begin annual acute toxicty testing of the outfall for compliance monitoring purposes. The first test should be conducted by September 1, 1995, and the test organism should be Pimephales promelas.

Although the Instream Impact Study calculated a dilution of 3% effluent in the intermittent stream, I recommend a much more conservative dilution of 50% effluent concentration be used for defining an acceptable test endpoint. Therefore, if the first annual test results in an LC50 less than 50% effluent, then the test shall

TOXICITY TEST DATA - OUTFALL 001

Table 1. Toxicity test results from effluent collected at outfall 001 prior to separator BMPs.

Date	Test Organism	Result	% Survival in 100% Effluent
Nov. 29, 1993	P. promelas	LC50 = 68.6%	0%
Nov. 29, 1993	C. dubia	LC50 = 79.4%	35%
May 27, 1994	P. promelas	LC50 = 4.9%	0%
May 27, 1994	C. dubia	LC50 < 6.25%	0%
June 28, 1994	P. promelas	LC50 = 75.8%	0%
June 28, 1994	C. dubia	LC50 = 85%	0%

Table 2. Toxicity test results from effluent collected at outfall 001 subsequent to separator BMPs.

Date	Test Organism	Result	% Survival in 100% Effluent
Jan. 16, 1995	P. promelas	LC50 = 80.2%	25%
Jan. 16, 1995	C. dubia	LC50 > 100%	95%
Jan. 20, 1995	P. promelas	LC50 = 65.7%	0%
Jan. 30, 1995	P. promelas	LC50 = 70.7%	0%

VA0054291
RG-R

May 12, 1995

Mr. Mike Spence
International Matex Tank Terminals
P.O. Box 7661
Richmond, Virginia 23231

RE: In-Stream Impact Study
IMTT Richmond
Omega Project #95-087

Dear Mr. Spence:

The following information is provided to document activities conducted on May 3, 1995 during the in-stream impact study at the above mentioned location.

BACKGROUND INFORMATION

An OWS (oil water separator) is located near the southwest corner of the IMTT Richmond facility. This OWS treats storm runoff that is collected at concrete pads located at the loading rack and pump pad. After the water enters the OWS, it is passed through several baffles that retain free phase oil fraction if it is present. The final stage is a compartment that has a discharge port located at the high water mark. When the water reaches this level, it is discharged to a drainage ditch located along the southern border of the property. The rate of discharge is directly related to the rate of stormwater runoff collection. Runoff in the general area of the facility is toward the south, toward Almond Creek.

Specifically, the initial receiving stream (drainage ditch) is an ephemeral stream. Since this stream flows only in direct response to precipitation, it can not support aquatic flora or fauna. This drainage ditch discharges to an intermittent stream east of Route 5 (Old Osborne Turnpike). During low flow periods, this stream contains an estimated 1,500 gallons of water.

The drainage area that contributes runoff to this intermittent stream is approximately 500,000 square feet. Assuming a large storm event (1.5 inches of rain), the volume of water precipitated on this drainage area is estimated to be 467,500 gallons. If 75% of this water is lost due to evapotranspiration and infiltration, then approximately 116,875 gallons of runoff is discharged to the intermittent stream.

FIELD ACTIVITIES

On May 3, 1995, Mr. Jack Mason (Omega Environmental Services, Inc.) and Mr. Mike Spence (IMTT) conducted a dye tracer study. Mr. Mason Harper (Virginia Department of Environmental Quality) was present to witness the activities and to provide comments concerning our study.

Approximately 100 dye tablets were added to the last chamber of the OWS. The fate of the discharged water was in question, tracking the transport of the colored water would determine if the discharge was reaching Almond Creek, a tributary of the James River.

The combined uncovered surface areas of the two collection pads is approximately 3,007 square feet. Assuming a large storm event (1.5 inches of rain), the volume of runoff collected at these pads would be approximately 376 cubic feet or 2,812.5 gallons. A fire hydrant with a controlled flow of approximately 100 gpm was utilized to induce flow to the OWS and subsequently induce discharge to the drainage ditch. The test was conducted following a several-day storm event. The ground surface was saturated and was assumed to be "pre-soaked". Infiltration of the discharge into the subsurface was expected to be minimal.

The water flowed to the west in the drainage ditch until it was diverted to the south by another drainage ditch, both considered to be ephemeral, located parallel and adjacent to Old Osborne Turnpike. The discharged water continued to flow south until it reached a topographic low area, approximately 350 feet from Almond Creek. A culvert under Old Osborne Turnpike is located at this topographic low area to allow the water to be diverted to an intermittent stream to the southwest. The discharged water eventually reaches a privately owned pond located adjacent to Almond Creek and southwest of the site as indicated by the appearance of the dye. No evidence was observed that suggests that there is a direct connection between this pond and Almond Creek. Figure 1 shows the area topography and flow direction of the discharged water.

CONCLUSIONS

Based on the observations from this study, the initial receiving stream (drainage ditch) is an ephemeral stream and can not support aquatic flora or fauna. Therefore, no potential for a negative impact from the discharge on aquatic life exists at the initial receiving stream.

Discharge from the OWS during a storm event ultimately terminates at a privately owned pond located to the southwest of the site. There is no evidence that this pond and Almond Creek are directly connected. Water from this pond would enter the creek by over spilling the banks during a catastrophic storm event or by infiltrating to the ground water and ultimately discharging into the creek.

FIGURE III

AQUATECH ENVIRONMENTAL SERVICES, INC

CUMULATIVE DATA SUMMARY SHEET

Facility: IMTT-Richmond Terminal

VPDES permit Number: VA0054291

Attachment 3
~~VA0054219~~
VA0054291
Statement of Basis

OUTFALL # 001

Test Date	Vertebrate	Invertebrate	LC50 (%)	T.U.
11/29/93	X		68.64%	1.46
11/29/93		X	79.37%	1.26
5/27/94	X		4.90%	20.41
5/27/94		X	< 6.25%	< 16.0
6/28/94	X		75.79%	1.32
6/28/94		X	85%	1.18
1/16/95	X		80.17%	1.25
1/16/95		X	> 100%	1
1/21/95	80 mg		65.74%	1.52
1/21/95	80 mg + Recon		> 100%	1
1/21/95	30 mg		74.52%	1.34
1/31/95	80 mg		70.71%	1.41
1/31/95	80 mg + Recon		89.09%	1.12
1/31/95	30 mg		70.71%	1.41
9/17/95	X		70.71%	1.41
4/30/96	X		93.61%	1.068
11/27/96		X	79.37%	1.26
4/22/97	X		>100%	1
10/20/97	X		75.17%	1.33

Prepared by: Amelia L. DaCruz, Lab Director

CUMULATIVE DATA SUMMARY SHEET

Facility: IMTT-Richmond Terminal

VPDES permit Number: VA0054291

OUTFALL # 002

Test Date	Vertebrate	Invertebrate	LC50 (%)	TU
11/29/93	X		> 100%	1
11/29/93		X	> 100%	1
5/27/94	X		> 100%	1
5/27/94		X	> 100%	1
11/28/94	X		> 100%	1
11/28/94		X	> 100%	1
12/1/95		X	> 100%	1
11/27/96		X	>100%	1
10/20/97	X		>100%	1

Prepared by: Amelia L. DaCruz, Lab Director

RF | Lett
VA0054291

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office

4949-A Cox Road, Glen Allen, Virginia 23060

804/527-5020

TO: File (R/R-Left)
FROM: Doris McLeod DAM
DATE: November 19, 2002
SUBJECT: VA0054291 IMTT-East, Site Visit on October 24, 2002
COPIES: Steve Stell

On October 24, 2002, Oula Shehab and I went to view operations at the IMTT-East and IMTT-West Terminals. This scheduled inspection started at 9:30 am and lasted until approximately 11:00 am. This write up documents observations noted at IMTT-East. This facility is located off Route 5 just across the Richmond/Henrico County line in Henrico County. Mr. Mike Spence, the terminal manager, escorted us around the properties.

Runoff collected from the loading rack area and the pump and valve areas is sent to a covered oil water separator, approximately 10,000 – 12,000 gallons in size. This OWS was installed in 1978. The cover appeared damaged and unstable. The facility representative noted that plans were being made to replace the cover.

The contents of the oil/water separator appeared very dark, with a heavy oily sheen throughout. The contents had a strong petroleum odor. The contents of the OWS exits a pipe in the decant end of the unit and flows to Outfall 001. The previous permit writer had allowed the facility to sample inside the OWS by the discharge pipe instead of at the actual outfall due to the difficulty in reaching the outfall, which is behind a thick row of bushes and a fence, and down an embankment. This practice is being reviewed to determine consistency with current sampling guidance.

The current permit, which expires in May of 2003, does not contain whole effluent toxicity testing requirements, nor does it contain water quality standards testing requirements (Appendix A testing). Documentation in the file for the previous reissuance indicates that WET testing was not included since no toxicity was noted in any previous test. The facility representative stated that some years back, an instream toxicity evaluation was performed. This report, dated May 12, 1995, was reviewed by toxics staff in a memorandum dated May 18, 1995. The recommendations indicated that even though the toxicity evaluation calculated a dilution of 3% effluent in the intermittent stream, an LC50 of no less than 50% effluent should be used for defining an acceptable test endpoint. The current state of the oil water separator, which does not appear well maintained or clean and is over 30 years old, indicates that some type of testing may be appropriate in the coming permit cycle.

It should be noted that according to the instream toxicity study, which included a dye test, Outfall 001 enters an ephemeral stream that discharges to a private pond. This outfall was

characterized in the previous permit as discharging to an unnamed tributary to the James River. Jennifer Palmore has been apprized of this discrepancy.

Mr. Spence stated that the OWS unit had been cleaned sometime in the previous year by steam cleaning. No detergents were used in the cleaning. The OWS was allowed to fill up with rain water and storm water. It was not filled with city water.

Runoff collected in the dike surrounding the tanks flows via gravity to the west end of the dike area. This area, according to the facility representative, remains wet most of the year. The area contains a pier with a device to open a valve to allow the water to flow to outfall 002 outside if the berms. The collected runoff appeared fairly clear, with no discernable odor. Outfall 002 discharges to an unnamed tributary to the James River.

The facility also has a sand filter to process its waste from the employees bathrooms. This sand filter received a general permit in 1991, VAG000001, that expired in 1996, and was issued by Allan Brockenbraugh. Mr. Spence said that this permit was allowed to lapse since the IMTT East portion of the terminal is no longer actively manned. Personnel use the facilities at the IMTT West Terminal. IMTT West is equipped with a septic system. IMTT West's effluent from the terminal operations is permitted under VA0055409.

IMTT-East has submitted a permit application for the reissuance of its VPDES permit. This application was considered incomplete due to lack of testing information and also a few administrative problems such as the need for documentation asserting that Mr. Spence is legally able to sign the application. See letter dated July 11, 2002 from VDEQ to Mr. Spence. This data has been collected and submitted to this office on November 12, 2002. The permit application was considered complete on this date.

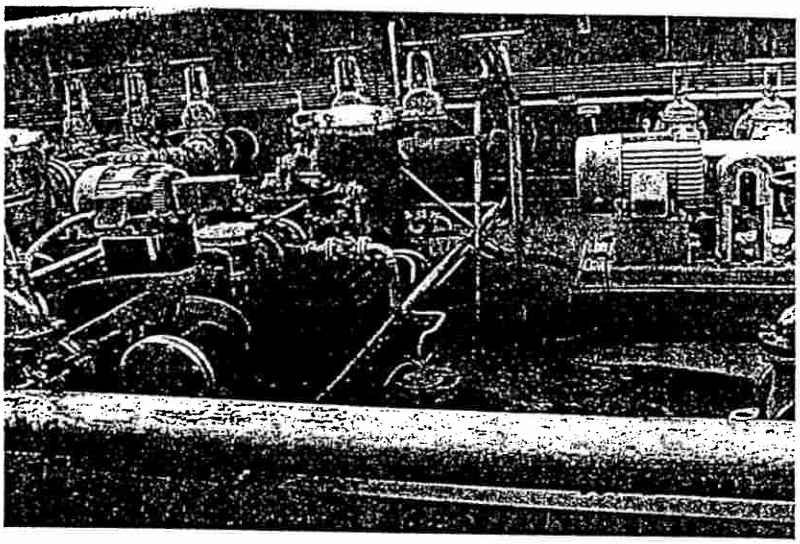
General Recommendations:

1. Repair the cover to the OWS.
2. Have facility establish and maintain a cleaning schedule for the OWS.

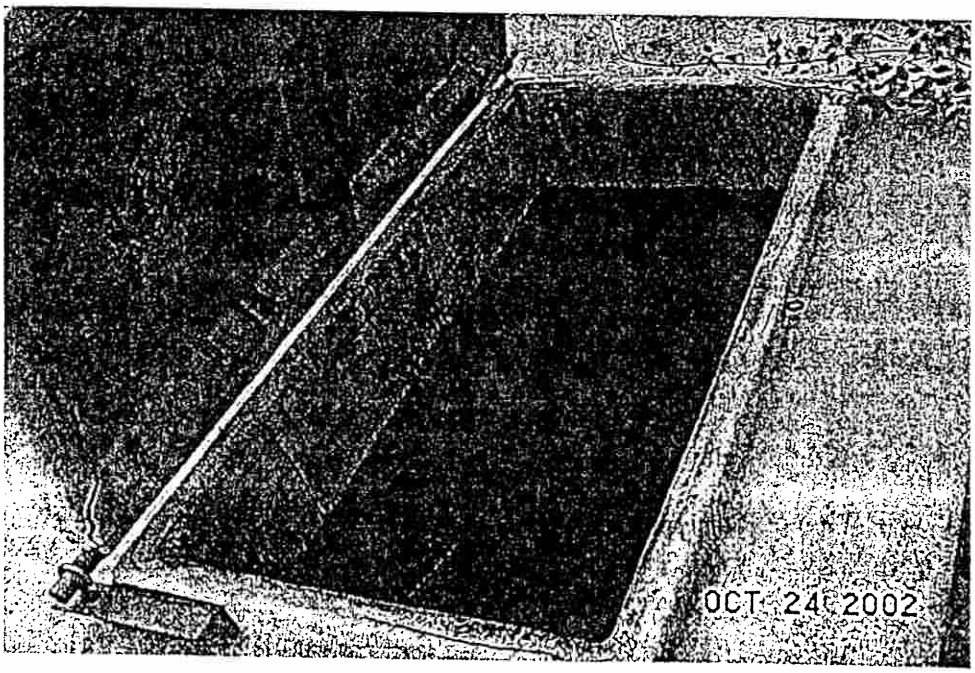
Compliance Recommendations:

1. Establish with compliance personnel an appropriate location for taking samples from outfall 001.
2. Establish and maintain access to Outfall 001.

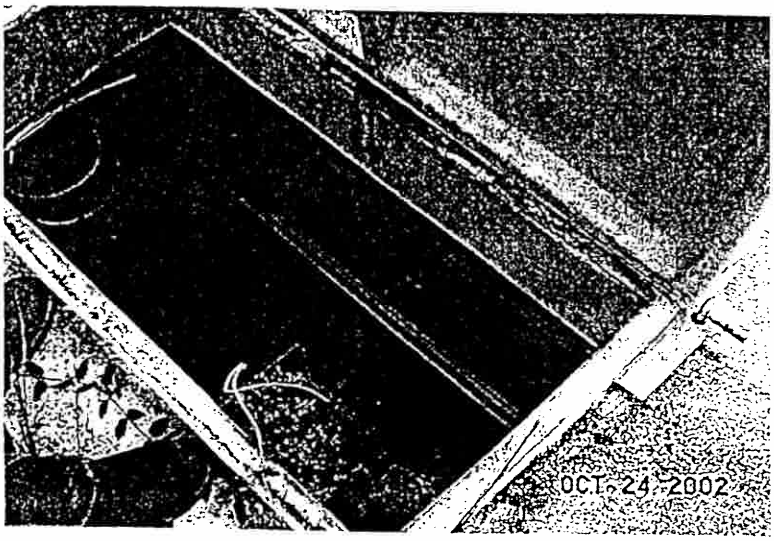
Outfall 001



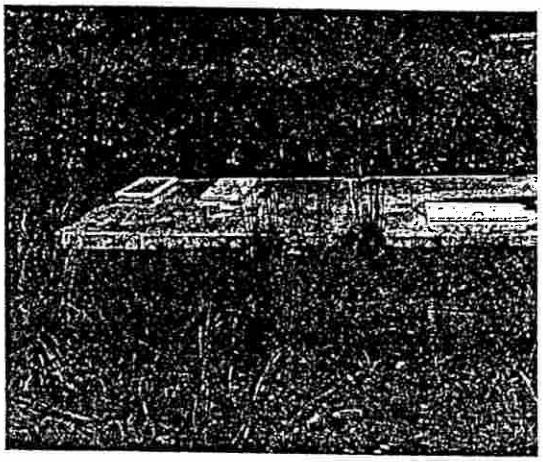
This picture shows one of the drains that allow captured stormwater to flow to the oil water separator. The oil water separator receives water from the drains around the valves and pumps as well as the loading rack. The facility manager, Mr. Mike Spence, noted that this loading rack had not been used in 6 or 7 years.

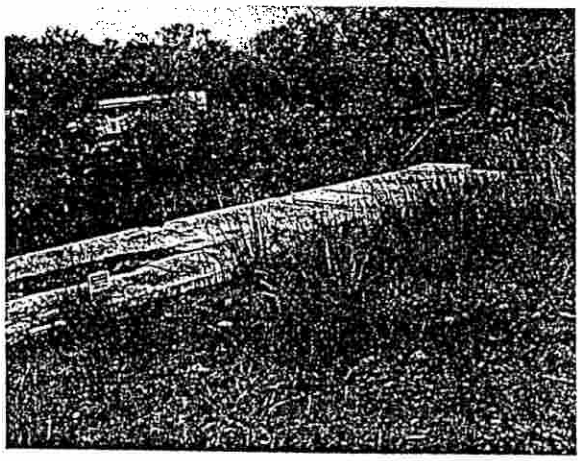


This picture shows the first section of the oil water separator where the mixture flows into the device. Every section of the oil water separator had a strong petroleum smell. The influent had a heavy oil sheen. The OWS was constructed/installed in the late 1970's.



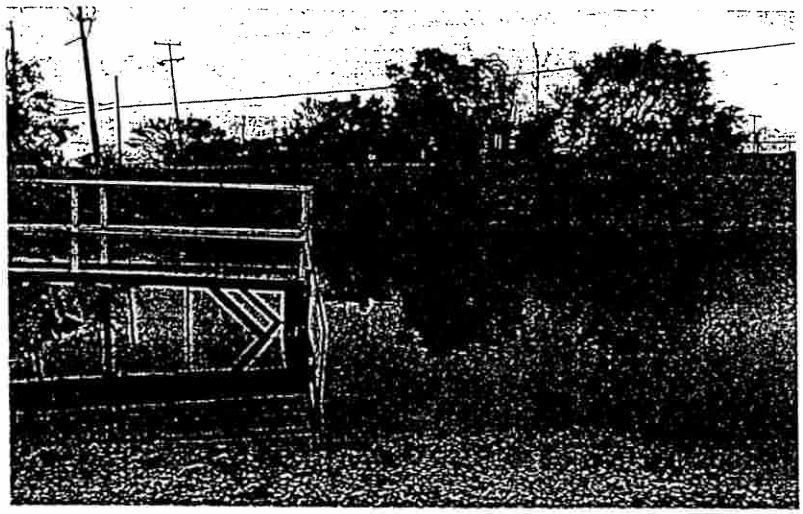
This picture shows the last section of the oil water separator. The OWS discharges through the pipe in the upper left-hand corner of the picture to the UT of the James River (Outfall 001). Previous permit writers have allowed sampling inside this segment prior to the pipe because of the difficulty of accessing the outfall. This situation is being examined for compliance with current guidance on sampling procedures. The water in the segment had a distinct oily sheen and a very strong petroleum smell.



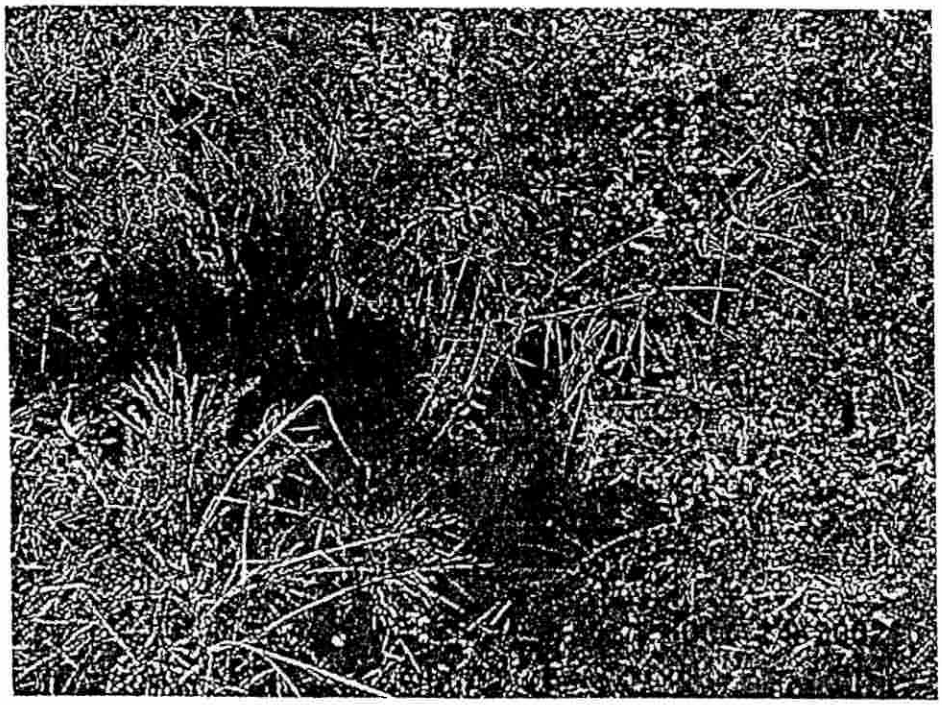


The above two pictures show the length of the OWS at IMTT-East. The outfall is behind the hedge of bushes at the rear, down an embankment. The cover of the OWS, which appears to be fiberglass or plastic, is heavily damaged and not sturdy. Mr. Spence mentioned that plans were being made to replace the cover. Mr. Spence said that the OWS had been cleaned via high pressure washing in the past year.

Outfall 002



Stormwater in the tank farm dike area collects at one end of the dike area. Mr. Spence said there is usually water at this end of the dike area. Tanks, not show, are to the right of the picture. The rod protruding down from the end of the pier releases a valve that allows flow of the water to the drainage ditch, as shown below.



Kazio,Jeremy

From: DeBiasi,Deborah
Sent: Friday, October 31, 2008 2:51 PM
To: Kazio,Jeremy
Subject: RE: IMTT East . . . again

Jeremy, I apologize for not remembering about the ponds being on Vulcan's property. Thanks for the clarification.

Here is some sample language for you to consider. I opted for 4 sets of tests in item b., but if you aren't comfortable with that, change it. Let me know if you have any questions on this.

Deborah

****

1. Biological Monitoring:

   a. The permittee shall collect composite samples of effluent from outfalls 001 and outfall 002 for biological testing. The acute multi-dilution NOAEC tests to use are:

      48-Hour Static Acute test using *Ceriodaphnia dubia*
      48-Hour Static Acute test using *Pimephales promelas*

      These acute tests are to be conducted using 5 geometric dilutions of effluent with a minimum of 4 replicates, with 5 organisms in each. The NOAEC (No Observed Adverse Effect Concentration), as determined by hypothesis testing, shall be reported on the DMR. The LC_{50} should also be determined and noted on the submitted report. Tests in which control survival is less than 90% are not acceptable.

      The permittee may provide additional samples to address data variability during the period of data generation. These data shall be reported and may be included in the evaluation of effluent toxicity. Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.3

   b. Each composite sample for outfalls 001 and 002 shall consist of grab samples collected hourly during the period of discharge or, during the initial 24 hours of discharge, should the duration of the discharge exceed 24 hours. Effluent sampling shall begin as soon as possible following the initiation of the discharge. Sampling and testing should be performed on a minimum of 4 discharge events from each outfall, with at least 30 days between discharge events.

   c. The permittee shall include with the results of the biological tests performed with a particular sample:

      (a) An estimate of the total volume discharged through outfall 001 or 002 and the duration of the discharge.

      (b) The time at which the discharge was initiated.

      (c) The time at which sampling was initiated.

   d. The test data will be evaluated by STATS.EXE for reasonable potential at the conclusion of the test

period. The data may be evaluated sooner if requested by the permittee, or if toxicity has been noted. Should evaluation of the data indicate that a limit is needed, a WET limit and compliance schedule will be required and the toxicity tests of 1.a. may be discontinued.

e. The permit may be modified or revoked and reissued to include pollutant specific limits in lieu of a WET limit should it be demonstrated that toxicity is due to specific parameters. The pollutant specific limits must control the toxicity of the effluent.

f. Schedule:

Submit the test report for outfall 001 or 002 with the DMR for the month following the sampling event.

-----Original Message-----
From: Kazio,Jeremy
Sent: Thursday, October 30, 2008 3:46 PM
To: DeBiasi,Deborah
Subject: RE: IMTT East . . . again

The impact study stated that dye testing shows that the effluent never reaches state waters, but instead flows to private ponds on another property. That creates some problems with the reasoning used for excluding WET testing.

1) If the flow never reaches state waters, then why do they even need a VPDES permit at all?

2) The private ponds exist on another property (Vulcan Materials). So wouldn't the effluent have to meet WQS when it leaves IMTT's property in order to protect potential uses by the owner downstream?

3) I don't know for sure if the ponds actually do discharge to Almond Creek. I can only go off of what I discovered during my site visit, at which time I only used logic to determine that the pipe discharging to Almond Creek HAD to come from the pond as there is no other reason for the pipe to exist. Dye testing would not be enough to make that determination for sure unless the entire pond were dyed. So to err on the safe side, it seems logical to include WET testing, especially since it was recommended in the previous permit writer's notes during her site visit back in 2003.

4) IMTT discharges not during storm events, but when the water builds up to a point that it gets in the way of daily operation. Then the bermed area is released without treatment (outfall 002), and the truck loading/unloading wet well is released to the oil/water separator (outfall 001).

Anyway, I am going to go ahead and just include WET testing with the suggested language that you proposed. Thank you again for the advice. If you have any other concerns about this facility, don't hesitate let me know.

Jeremy S. Kazio, Water Permit Writer
VA DEQ Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060
Phone: 804/527-5044
Fax: 804/527-5106

From: DeBiasi,Deborah
Sent: Thursday, October 30, 2008 3:16 PM
To: Kazio,Jeremy
Subject: RE: IMTT East . . . again

They are bound to have a discharge from one or both ponds in a storm event, unless they were designed to hold the water from a large storm event, which it doesn't look like. Once they discharge, it would seem that they go to Almond Creek,

which probably goes to the river(?).

Also, it doesn't matter that the stream is ephemeral and is deemed not capable of sustaining flora/fauna. It is a conveyance which directs the flow from the IMTT site to the pond, which discharges both intentionally (when pumped) or by overflow to Almond Creek, and then to the river(?).

-----Original Message-----
From: Kazio,Jeremy
Sent: Thursday, October 09, 2008 7:15 AM
To: DeBiasi,Deborah
Subject: RE: IMTT East . . . again

Thanks for the compliments and suggestions!! I will begin modifying the language to conform to this facilty's situation. Thanks again.

From: DeBiasi,Deborah
Sent: Wednesday, October 08, 2008 5:23 PM
To: Kazio,Jeremy
Subject: RE: IMTT East . . . again

Hey, Jeremy!

That was a really nice, thorough job you did putting together the site inspection - one of the best I've seen.

I will have to be getting back to you piecemeal, but I agree that this facility needs to have a TMP put on it. The smell of the discharge alone is enough to warrent it. I'll try to give you some more "pointers" tomorrow, but at any rate, you'll want to put the multi-dilution NOAEC test requirements in, not the single dilution one - the single dilution is only for a WET limit. The language below is from the manual and will need just a little adapting for this case. I'm even thinking that they should test both 001 and 002, since they come from different areas - that way, you may be able to backtrack a problem easier.

Those septic tanks are puzzling - as are all those pipes. More later!!!!!!!!!!

1. Biological Monitoring:

   a. In accordance with the schedule in 2. below, the permittee shall conduct quarterly acute toxicity tests for the term of the permit using 24-hour flow-proportioned composite samples of final effluent from outfall __. The acute multi-dilution NOAEC tests to use are:

      48-Hour Static Acute test using *Ceriodaphnia dubia*
      48-Hour Static Acute test using *Pimephales promelas*

      These acute tests are to be conducted using 5 geometric dilutions of effluent with a minimum of 4 replicates, with 5 organisms in each. The NOAEC[1][1] (No Observed Adverse Effect Concentration), as determined by hypothesis testing, shall be reported on the DMR converted to TU_a (100/NOAEC). The LC_{50} should also be determined and noted on the submitted report. Tests in which control survival is less than 90% are not acceptable.

The permittee may provide additional samples to address data variability during the period of initial data generation. These data shall be reported and may be included in the evaluation of effluent toxicity. Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.3

b. The test data will be evaluated by STATS.EXE for reasonable potential at the conclusion of the test period. The data may be evaluated sooner if requested by the permittee, or if toxicity has been noted. Should evaluation of the data indicate that a limit is needed, a WET limit and compliance schedule will be required and the toxicity tests of 1.a. may be discontinued.

-----Original Message-----
From: Kazio,Jeremy
Sent: Tuesday, September 30, 2008 11:35 AM
To: DeBiasi,Deborah
Subject: IMTT East . . . again

Deborah,

I called you last week (or the week before?) about this permit. Just to refresh you, this facility had WET monitoring at some point in the past, but it was taken out for reasons that I don't believe are true.

This facility stores petroleum based products in bulk. The discharges they have are:

Outfall 001: Stormwater runoff comes from a covered truck loading/unloading area in which the petroleum products are transferred (by pump) to/from the giant petroleum storage tanks. The trucks drive over a grate, with a wet well underneath. The well's outlet is equipped with a valve that, when opened, releases whatever is within the well (stormwater + spilled petroleum product) to an oil/water separator, which then discharges to a dry ditch leading to a road culvert.

Outfall 002: Stormwater collects within the bermed area in which the petroleum storage tanks are located. This water is held in a low spot near the release valve until the permittee deems it necessary to release the water. These waters are not treated.

I have attached several files that may interest you. I conducted a site inspection back in May, and I have included the report. I also scanned in the previous permit writer's reasoning for leaving the WET monitoring out of the permit (along with the results of the LC50 tests conducted in the '90's ← no reviews were conducted on these test results, so this all I have to go off of). In addition, the WETLIM results for the vertebrate and invertebrate data are also attached.

Please keep in that the instream impact report had made the assumption that the facility's effluent comprised only 3% of the stream flow during a rain event. I think that this led to the recommendation that the facility meet a minimum LC50 of 50% in order to determine if TMP monitoring was necessary. But I think that the 3% assumption is flawed by the fact that this facility does NOT discharge during storm events only.

STATS and WETLIM contain the same recommended limit (because QL=1, CV=0.6) so I am just including the WETLIM results. Below is the proposed permit language, but I think it may need some tweaking, although I am not sure how. The fact sheet explanation is going to be tricky and I will take care of that with Curt's help. Can you please review everything and give me your final thoughts and changes to the permit language? Thank you so much.

6. **Whole Effluent Toxicity (WET) Monitoring Requirements**

   a. **The permittee shall conduct toxicity testing as specified below:**

      (1) The permittee shall conduct annual acute toxicity testing using grab samples of final effluent from Outfall 001. The acute tests to use are:

      48-Hour Static Acute Test using *Ceriodaphnia dubia*
      48-Hour Static Acute Test using *Pimephales promelas*

(2) These acute tests are to be conducted using a minimum of 4 replicates with 5 organisms each, for the control and effluent. The NOAEC (No Observed Adverse Effect Concentration) shall be reported either as 100% or <100% (less than 100%). The effluent will be in compliance if the survival of the test organisms in both the control and the 100% effluent exposures equals or exceeds 90%. If the survival in the effluent is less and this value is significantly different from the control survival, as determined by the hypotheses testing, the NOAEC is less than 100% and the effluent is not in compliance. Tests in which control survival is less than 90% are not acceptable.

(3) Two copies of the toxicity test results shall be submitted with the DMR. Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.6.

b. **This permit may be modified or revoked and reissued to include pollutant specific limits in lieu of a WET limit should it be demonstrated that toxicity is due to specific parameters. The pollutant specific limits must control the toxicity.**

PS: If you decide to view my site visit report, I would suggest that you somehow make it so that you can reference the two aerial photographs at the end of the report at the same time that you're reading the report. The aerials are referenced many many times throughout. Thank you!!!!

Jeremy S. Kazio, Water Permit Writer
VA DEQ Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060
Phone: 804/527-5044
Fax: 804/527-5106

[1] [1] NOAEC = the highest percent concentration where there was no significant difference when compared to the controls. (Note: This is interpreted as the highest percent concentration where there is no significant difference when compared to the controls, and below which there is no statistically significant adverse effect.)